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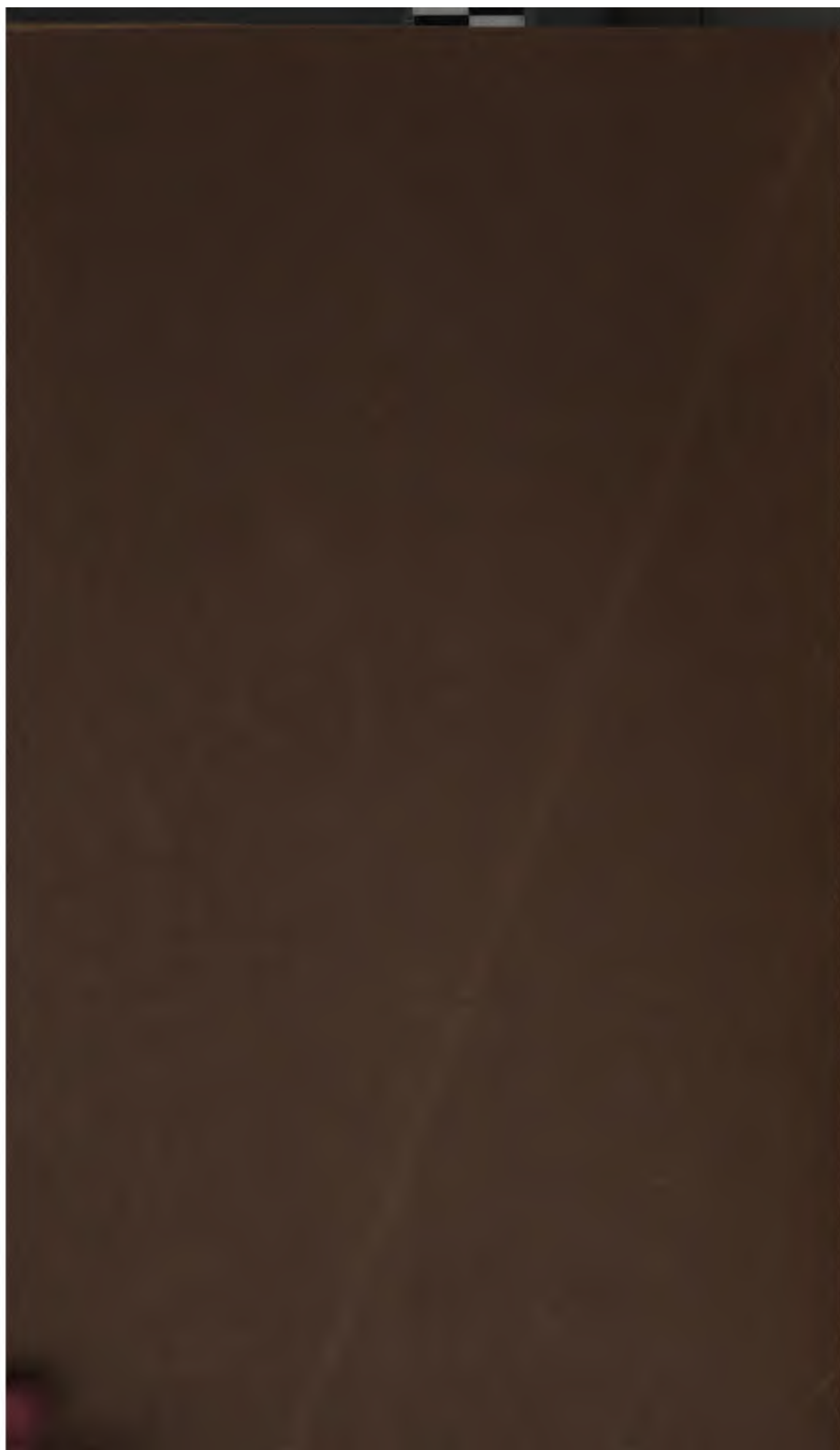
PSYCHOTHERAPY

A COURSE OF READING

COMBINING
SOUND PSYCHOLOGY
SOUND MEDICINE
& SOUND RELIGION

"This is the great error of our day in the treatment of the human body, that physicians separate the soul from the body."—Plato.

THE CENTRE PUBLISHING CO., N.Y.





PSYCHOTHERAPY

A COURSE OF READING
IN SOUND PSYCHOLOGY, SOUND MEDICINE,
AND SOUND RELIGION

Edited by W.B. Parker



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Editors' Preface

THE editorial plan of this course provides for the coöperation of many hands. The various parts of the course will be written by authorities in their special fields, to whom, naturally, must be allowed freedom of presentation from their individual points of view. The writers of the different articles will be united in a common interest, but will not necessarily agree at all points in opinion. It will be the editorial policy to permit of the free expression by each writer of his personal views. The course will in no sense champion a cult or serve the purposes of propaganda. It aims to supply information. It will be the object of the editors, however, to so relate and connect the various articles as to form a continuous and harmonious presentation of the facts and of opinions bearing upon them.

The application of psychotherapy in its modern scientific form is so new that final judgment still remains to be passed upon many of its developments. This makes it imperative that in endeavoring to impart information on the whole subject we should be impartial in treatment. It will be borne in mind by the editors that psychotherapy is growing, that the final lesson from its use is still to be learned. The accounts of some of its developments must, therefore, be looked upon in the nature of reports on existing conditions, subject to further examination and later judgment.

Especially in the realm of religious psychotherapy is it necessary to bear in mind that various points of view exist. It will be our endeavor to set forth through the authorities themselves scientific as well as religious opinion with equal impartiality.

Editorial Aids

A brief summary of each article, notes and collateral reading, and comment introductory to the next following article, supplied by the editors, will be placed between the contributed articles to serve as aids to their understanding, to furnish additional information, and to form the connect-

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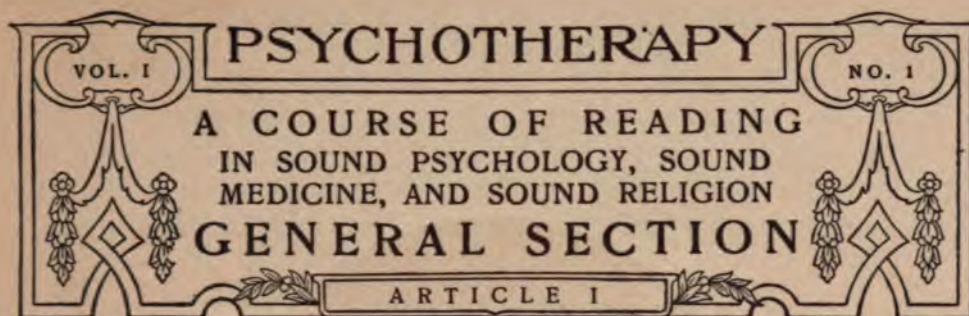
Dr. Cabot will contribute to the course an extended series of articles that will give a simple, unified account of psychotherapy. He will deal with medicine, psychology, and religion, and show how they are related in this activity. He will take up the subject as a whole, and thus bring out the bearings upon the general subject of the detailed accounts by other writers of its more special psychological, neurological, religious, and historical sides. Dr. Cabot's articles will answer the question, what does psychotherapy mean in every-day life?

In the opening article Dr. Cabot shows why American doctors have been slow in taking up psychotherapy. He points out false hopes and false skepticisms associated with the subject, and thus clears the ground. According to Dr. Cabot, psychotherapy takes account of every element that concerns a man vitally. This broad conception of the topic gives the key to the mood in which we enter upon the various special lines of study involved in our subject.

What is the special field of psychotherapy? How is it limited? What are we to expect from its application? How is it related to various schools and cults of healing and to the work of the doctor and minister? These are questions which Dr. Cabot, in this introductory article, seeks to answer. Curiosity may prompt many of our readers to the first glimpse into this new-old realm of healing, the fame whereof has been bruited abroad, accompanied by more or less misconception and exaggeration. Dr. Cabot's article will to some extent satisfy this very natural craving; but we are mistaken if it will not do much more, if his lucid explanation of the possibilities and aims of psychotherapy does not arouse a deeper interest and stimulate a desire for serious study.



FREDERICK PETERSON, M. D.



The American Type of Psychotherapy

A General Introduction

By RICHARD C. CABOT, M.D.

Instructor in Clinical Medicine in Harvard Medical School

EDITOR'S NOTE.—For introductory comment on Dr. Cabot's article and a statement of the general editorial plan and method of presentation of the Course of Reading see "Editor's Preface" on preceding pages.

PSYCHOTHERAPY means the attempt to help the sick through mental, moral, and spiritual methods. It is a most terrifying word, but we are forced to use it because there is no other which serves to distinguish us from the Christian Scientists, the New Thought people, the Faith Healers, and the thousand and one other schools which have in common the disregard of medical science and of all the accumulative knowledge of the past. On the other hand, this word—psychotherapy—allies those of us who use it with the French and German physicians who, for the past decade, have practiced psychotherapy and have written most of the best books upon the subject without, until very recently, influencing their American brethren to any considerable extent.

Scientific, rational mind cure (mind cure is the English for psychotherapy) has been used in America in a systematic way only within the past decade; American physicians fought shy of it for

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a long time. They had reasons for this, but not, in my opinion, good reasons. One of the most important of these reasons lay in the fact that Christian Scientists and other unorthodox schools of healing were already in the field and in competition with medical men.

Psychotherapy in Europe

TO suggest, in any way, that there might be truth in these foolish and unreasonable systems has seemed impossible to the American physician. In Europe, on the other hand, where there has been no movement among the laity, where psychotherapy has been wholly in the hands of the physicians, its scientific and reasonable sides have been developed, while we in America have sat by and watched the antics and extravagances of Mrs. Eddy and her school with disgust or with horror, but without any steady or consistent attempt to find out the truth behind their fallacies and absurdities, or to apply this truth in our own way.

Aside from a few gifted men—like Dr. S. Weir Mitchell—the physicians of this country have practiced psychotherapy largely without knowing it—that is, without any system or study. It was not until the translation in 1905 of Dubois's epoch-making book * that the American medical public became aware that there was such a thing as scientific mind cure. Mind cure they knew, and very properly abhorred. Science they also knew and loved; but any possible association of the science and mind cure seemed absurd.

Dubois, professor of neurology at the University of Berne, in Switzerland, a thoroughly trained scientific man, equipped with all the medical knowledge of the day, has yet, in his own way, and without any knowledge of the crude and extravagant methods employed by the Christian Scientists in this country, been practicing for twenty years a most successful type of mind cure which he describes in the book to which I have just referred. With the publication of this book our doctors began to wake up, and we may now say that psychotherapy is beginning to be studied and practiced by a large number of physicians all over this country.

* This symbol (*) refers throughout to notes at the end of articles.

AMERICAN TYPE OF PSYCHOTHERAPY

Coöperation of Doctor and Minister

I HAVE defined psychotherapy as the attempt to help the sick by mental, moral, or spiritual methods. These methods overlap and blend into each other, indeed I think it is proven beyond doubt that it is unwise to try to separate them—unwise, that is, to try to distinguish a person's "mind" from his "soul," or his "intellect" from his "moral life," by any hard-and-fast lines. We must appeal to the whole personality if we are successful in psychotherapy. This fact has, I believe, been realized more fully in America than elsewhere, and it is for this reason that the American type of psychotherapy seems to me to be something distinguishable—and in many respects superior to any other type now existing. Realizing, as we do, that mental activity merges continuously into moral and religious activity, we have not hesitated here in America to associate the man of science and the man of religion—doctor and minister—in a most favorable form of coöperation for the good of the sick. Out of this association has come what is known as the "Emmanuel Movement" * in Boston.

But we have also realized that the mental, moral, and spiritual health of the individual, through which we hope to influence his bodily condition, depends upon his work, upon the way he does his work, upon the spirit he puts into his work, and upon the satisfaction he gets out of it. We have realized, furthermore, that the health of the mind is largely influenced by home conditions, by personal friendships, by family affections, by all that goes on between man and man, as well as by work, and by more distinctively intellectual or religious influence. Hence, the American type of psychotherapy busies itself not only with the ideas that are floating through the patient's head, not only with his thoughts, his worries, his griefs, but also with his personal relations, with his friendships, his love affairs, his domestic and family affections.

In many of these matters the social worker is far more skilled than either the minister or the doctor. It is becoming increasingly clear that for the best results in psychotherapy we must have the coöperation not only of minister and doctor, but of minister, doctor,

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and social worker. It is this, I think, which, more than anything else, characterizes the type of psychotherapy which has sprung up on American soil. It is successful because it takes account of every element of a man's life, not merely of the physical and intellectual elements, but of all that concerns him vitally.

False Hopes

WITHOUT attempting to set any hard-and-fast limits, beyond which it is impossible for psychotherapy to be of use in disease, it is well, I think, to attempt to forestall hopes such as might be raised by the reading of a book like Dr. Quackenbos's treatise on hypnotism. Psychotherapy is not a cure-all, it is not going to reform all sinners, or make artistic or scholarly success issue out of a few hypnotic séances. There is no good reason to suppose that psychotherapy can, by itself, reform character or cure organic disease. It may aid in the reconstruction of character, and it can do a great deal toward curing disease of the type known to the physician as *functional* disease—disease, that is, in which there has been no widespread destruction of the organs or tissues of the body such as occurs in *organic* maladies. Functional disease—the type for which psychotherapy is especially important—means all that results from the unsatisfactory working, the perverted function of one or more organs. If your heart or your stomach misbehaves, that is functional disease, provided always that there is present no degeneration or inflammation which has destroyed large areas in an organ. Mental¹ treatment does not cure cancer, Bright's disease, valvular heart disease, consumption, or any of the stubborn, long-standing enemies of that type. But there is a great deal of hope in sight for the amelioration or cure of that great host of so-called functional diseases which make up not less than two fifths (probably more nearly one half) of all the cases of illness which the ordinary general practitioner sees.*

¹ I mean "mental" to include "moral" and "spiritual."

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In the opening article Dr. Cabor shows why American doctors have been slow in taking up psychotherapy. He points out false hopes and false stigmas associated with the subject, and thus clears the ground. According to Dr. Cabor, psychotherapy takes account of every element that concerns a man's life. This broad conception of the topic gives the key to the mood in which we enter upon the various special lines of study involved in our subject.

What is the special field of psychotherapy? How is it limited? What are we to expect from its application? How is it related to various schools and cults of healing and to the work of the doctor and minister? These are questions which Dr. Cabor, in this introductory article, seeks to answer. Curiosity may prompt many of our readers to the first glimpse into this new-old realm of healing, the fame of which has been bruited abroad, accompanied by more or less misconception and exaggeration. Dr. Cabor's article will to some extent satisfy this very natural craving, but we are mistaken if it will not do much more. If his lucid explanation of the possibilities and aims of psychotherapy does not arouse a deeper interest and stimulate a desire for serious study.

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in Boston, Mass., this autumn. So far, however, there are no physicians, so far as I know, who have received in their student days any training in the control and guidance of their patients' minds during an illness. This lack in the medical education of our time would probably have been less serious if our physicians had had any proper training in psychology either during their college course, or in any other way; for psychotherapy is largely applied psychology; psychology put to work under the conditions of sickness. It has been for lack of even an elementary knowledge of psychology that many of our worst blunders in medical treatment have come about.

Take, for example, the treatment of consumption. It is universally agreed to-day that in the severer stages of tuberculosis of the lungs, the patient must be kept at rest, if possible in the open air, and made to live, so far as may be, the life of a vegetable, or, at any rate, of a confirmed loafer. But not until within the last year or two has it occurred to physicians to notice that the patient may take this advice altogether too seriously; that he may learn so well how to loaf that he has no desire to stop loafing when the severest stages of his disease have passed and the time has come for reconstructing his shattered life.

Mind Always a Factor in Health

WE put a man on his back in a steamer chair or in a hammock and tell him to abrogate all the laws of morality, to do as little as he feels like, to move in the path of the least resistance, and so on. Sometimes he learns his lesson altogether too well, and we may have to work as hard to undo the bad effects of our treatment upon his character as previously we worked to undo the bad effects of his disease upon his body. In other words, the psychological side of tuberculosis has been largely disregarded. We have tried to have our patients live almost by bread alone, actually by milk and eggs alone, in some cases. The effect of idleness on the will, of a discouraging and unlovely health resort upon the spirits, of an empty outlook for the future, all these have been largely disre-

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garded. "Put him in the open air and fatten him up," we say. So far, so good. But he has a mind as well as a body, a future as well as a present, and neither element can be disregarded.

Heaven forbid that anyone should suppose that I am advocating mind cure as the proper treatment for consumption! I am only endeavoring to point out that even in organic disease—disease that cannot be cured by mental means—psychotherapy has yet a place, simply because the patient still possesses a mind and a soul; a morale which can be disorganized and weakened; a power of application and industry which may be broken up.

Need of "Team Work"

THE problem of occupation is at last beginning to engage the attention of the managers of sanatoriums for tuberculosis, and this not merely to keep the patients contented, but to aid in the healing of their lungs, and to prepare for the future in which they must make some attempt to get back into the ranks of the workers.

In this field, it is the social workers who have begun to open our eyes and show us the error of our ways. The clergyman and the student of psychology have also something to contribute, not interfering with the doctor's work in diagnosis, not in foretelling the future course of disease nor in combating it by mechanical, chemical, or biological agents, but joining with the doctor to execute a bit of "team work," such as Americans are especially able both to appreciate and to practice. This team work for the good of suffering humanity is the essential novelty and the essential merit of American psychotherapy.

—*Richard C. Cabot.*

Editor's Summary

This introductory survey of the subject of the course by Dr. Cabot may be considered as supplying the answers to some general questions. These may take the following shape:

What is meant by psychotherapy?

Scientific mind cure which does not disregard the accumulated knowl-

NOTES AND COMMENT

is attracting so much attention here, and when the problems connected with it are being attempted from so many and such various points of attack. The strong optimistic views of the book, its simple, untechnical language, and the directness with which its philosophy is applied to life, make it capable of becoming a vital fact, not merely to physicians, but to everyone who has pondered on the relations between the psychic and the physical; to everyone, indeed, who honestly desires to keep down the total of needless suffering in the world."

The editor of the French edition points out that "Dubois has had the merit of showing, in a series of publications, the primordial (fundamental), if not unique, rôle which is played in the treatment of the psychoneuroses by what I should like to call psychic pedagogy—that is to say, the reëducation of the reason. He has been the first resolutely to conduct all his therapy in accordance with this guiding idea."

The "Emmanuel Movement"

7. An indication of the hold that psychotherapy has taken on popular interest is supplied by a brief summary of the progress of the movement for its employment through religious organizations. In this form it became notable through the work of the Society of Emmanuel, formed in London in October, 1905. It was taken up under rational scientific guidance about two years ago by the Emmanuel Church in Boston, where a Class for the Treatment of Nervous Disorders was organized by Dr. Elwood Worcester, rector of the church. Along similar lines work has been started in churches representing not only the Episcopal denomination, but including Baptist, Congregational, Universalist, Unitarian, and Presbyterian congregations in Chicago, New York, Brooklyn, Jersey City, Rochester, Buffalo, Detroit, Northampton, Mass., and elsewhere.

The Roman Catholic Church has recognized the importance of the subject in "Pastoral Medicine," a handbook for the clergy written by Dr. Alexander E. Sanford and the Rev. Walter Drum, and bearing the imprimatur of the Archbishop of New York.

In England, where Milne Bramwell, Lloyd Tuckey, and A. T. Schofield, physicians and neurologists, have taken a prominent part in the psychotherapy movement, Canon Wilberforce has held special services in connection with this work, and the Bishop of London is interesting himself in it.

Psychotherapy's Field in the Cure of Disease

8. Dr. Paul Dubois ("The Psychic Treatment of Nervous Disorders," 1908, p. 27) points out the seriousness and the importance of the rôle played by nervous disorders that are subject to mental, or psychic, treatment. He says:

"Nervousness is a disease preëminently psychic, and a psychic disease



The Philosophy of Psychotherapy¹

The Attitude of Natural Science, and of Philosophy with regard
to Human Life

By JAMES JACKSON PUTNAM, M.D.

Professor of Diseases of the Nervous System in Harvard Medical School

Influences that Shape the Normal Man

THE purpose of these papers is eminently practical.* I wish to point out the mode of origin of certain familiar forms of disorder of the nervous system and the principles being followed by physicians in their cure. And since the disorders that I have in mind arise largely as caricatures of normal states and functions, I propose to sketch the more important of the influences that are favorable to the development of these normal states, of the conscious, efficient personality, as a preliminary to indicating how it is that such marvelous adjustments become a source of danger. The accomplishment of this task will necessarily involve constant reference not only to medical observation but also to the principles and discoveries of physiology and psychology, and at least a tacit recognition of the importance of chemistry and physics as branches of science on which biology is largely based.

Man is a psychophysical organism. We cannot think or feel or act without coming into relations, near or remote, to the physical world around us, and in the establishment of these relations our bodies play a necessary part. The *interpretation* which we place

¹ See note "The Next Article" on preceding page. * See note by author at close of article.

PHILOSOPHY OF PSYCHOTHERAPY

itself in conflict with their belief in the existence of the physical world as independent of the "persons" who inhabit it.

Prevalence of "Materialism"

PHILOSOPHIC doctrines leaning toward "idealism" of some sort have indeed made of late much progress, and many men who might deny them verbally are ready to die, if need be, in behalf of the truths for which such doctrines stand—the reality of love and justice and freedom of the will. Nevertheless, in theory, and even to some extent in practice, among persons who aim to be consistent and conscientious thinkers, "materialism" and "determinism" still hold sway. This is especially true of the natural scientists, who are carried away by admiration of the marvelous mechanisms which they have helped to bring to light, and feel themselves under bonds of loyalty to maintain against all comers the eternal validity of the laws of physics. But it is true also, in great measure, of physicians, who usually class themselves with naturalists, and of the many other persons whose mental "set" inclines them in the same direction.

It may be a matter of indifference to the community how naturalists feel about these questions, but it is of vital consequence how physicians look upon them. For their work calls on them to deal with persons thrilling with hopes and fears and doubts, brought face to face with the problems of the meaning of sickness and death, of the apparent unfairness in the distributions of chances in this world and of the possibility of life beyond it. How shall they encourage their patients to meet these problems?

Need to Fight Pessimistic Doctrines

IF the doctrine of free will is, in every sense, a mockery and it is really true that "science ends where liberty begins";¹ if spontaneity, the conscious choice of "purposes" and conscious effort to attain them are but dreams; if "adaptation" to an environment which in the last analysis is a physical environment is the principle

¹ Flournoy.

by which we finally are governed; if we have not the right to consider it—I will not say proved, but possible that the universe is, in some sense, the expression of a purpose, of the will of a moral personality, then the lot of those on whom the stress of life falls heavily is indeed harder than, in my judgment, it should be held. And, therefore, if there are solid arguments by which some portion of these pessimistic doctrines can be controverted and their opposites established, it is the duty of physicians to know them, in their practical and their theoretical bearings, and to make them known.

It makes a great difference whether troubles are encountered with a sense of bitterness and injustice, or as events having no meaning except as they carry a challenge to our shrewdness in avoiding them, or with a dignified stoicism which teaches their acceptance as necessary accompaniments of good, or, on the other hand, as experiences capable of intensifying our desire to probe still further the signification of a world which we believe to have been created to permit the development of individuality and free will. Even good physical health is to be promoted through harmonious thoughts, and a sense of moral and intellectual inspiration contributes an influence of real value toward the cure of physical ailments, while on the other hand a "blue pill" may be the best remedy for "the blues." The more deeply we probe the matter the more evidence we find that motions and even thoughts tend to reverberate through every function of the body, especially those related to the digestion and the circulation, and also through the most intimate processes of nutrition.

In seeking means to repair and consolidate the health neither the physical nor the mental agencies should be overlooked; but the physician's most striking need at present, in dealing with disorders of the species here in question, is to learn to utilize *motives* of what might be called the higher sorts. In proceeding to this task it is important that we should have, if it is possible, a conception of human life that is at once inspiring and responsive to the demands of reason, and the best way to ascertain these demands is to consider what attitude the representatives of the different departments of science hold with reference to the problem of consciousness.

PHILOSOPHY OF PSYCHOTHERAPY

Natural Science Doctrines

Professor Putnam gives an exposition of the theories of human life held by the three groups of scientists—the physicists, the biologists (or evolutionists), and the physiologists—and on page 31 returns to more general considerations. The attitude of the physicists as expressed by Professor Ostwald. His theory of the possible bridging of the gulf between the living and the non-living. Belief that energy and consciousness are alike in quality.—ED.

THE attitude of most physicists is well known. The earth could not have supported organic life until within comparatively recent times, but motion and “energy” were there before, and, as miracles are ruled out, the spiritual world owes its origin to the same sources with the world of organic matter. Even recently, Professor Ostwald,¹ the great chemist, a liberal and far-seeing thinker,* who lately came among us as lecturer at Harvard University, chosen as a representative of German physical science, has expressed the view that physical and chemical forces under favorable conditions of moisture may conceivably have bridged unaided the gulf which seems to separate the non-living and the living. If this supposition could be granted and organic life assumed to be created in this fashion, no matter in how primitive a form, the secret of evolution might be claimed to be our own.* The “potentiality” of the last and best man would be given, one would have to believe, with the first spark of organic life, and not only that but the entire history of organic life, including human life, would be contained or foreshadowed in the prehuman physical history of the world, and conscious life would be reduced to a refined interplay of chemical forces. Thus every factor in the final result would be “given” at the outset, and true “evolution,” in the idealistic sense, would be impossible.

“With Earth’s first Clay They did the Last Man knead,
And there of the Last Harvest sow’d the Seed;
And the first Morning of Creation wrote
What the Last Dawn of Reckoning shall read.”
(Omar Khayyam—Fitzgerald.)

¹ “Die Philosophie der Natur.” See also address at the opening of Emerson Hall, Cambridge, 1905.

The Doctrine of "Energies"

OF course, under any hypothesis something must have been "given." But according to the idealist theory life is the ultimate reality, while on the materialistic theory man is "simply an incident in the condensation of dispersed matter, or the cooling of a fiery gas."¹ The arguments in favor of this ranging in one category the phenomena of matter and those of life and consciousness have seemed to become more plausible through the recent change of sentiment among scientific men in favor of substituting the doctrine of "energies" for that of "atoms" in the old sense. The modern physicist scarcely feels the need of atoms for the world of his conception. Ostwald is a well-known advocate of these new standards, believing that it is possible to explain, not only heat and cold and weight and sound and color, but also depth and form and surface, through modes of energy to which he gives appropriate names. It is well known that many years ago Lord Kelvin, also, proposed to substitute the conception of force-vortices for that of atoms. This conception was largely physiological in its origin. Since it is clear that all we know of the material world is given in our sensations, and that all we need to excite our senses is some form of vibratory energy, it seems reasonable to give up the world of matter altogether and on the broad shoulders of the "energies" to throw the whole burden of producing all the shifting scenes of nature.

"Psychic Energy"

THE next step, though vitally significant, seems an easy one, and Ostwald actually takes it. "Energy" is "immaterial," consciousness is immaterial; may they not be alike in quality, and may we not thus bring consciousness within the charmed circle of the doctrine of the laws of nature? "It does not seem to me pre-

¹ Cited in "Personalism," by Prof. B. P. Bowne. To this extremely interesting book, in which the doctrines of idealism are set forth with remarkable clearness and skill, I take this occasion to express my debt.—J. J. P.

PHILOSOPHY OF PSYCHOTHERAPY

sumptuous to suppose," writes a physician¹ recently, "that some day it will be possible to demonstrate in this domain the law of the conservation of energy." Ostwald entertains this view as plausible and suggests the name of "psychic energy" for consciousness, which thus takes its place among the physical forces and becomes submissive to their laws. It is evident that however this "psychic energy" may be qualified it is tarred with the stick of its origin and abandons its claim to "free will" in exchange for its new name. In spite of these materialistic tendencies of physical science, it is a fact, as the late Professor Paulsen has pointed out,² that a strong feeling of sympathy with modern idealistic views runs like a red line through the writings of many of the most thoughtful and most careful of the recent students of the physical aspects of nature.

Evolutionary Doctrines

The evolutionary conception of progress and change, and the supplementary doctrine of free will or spontaneous creative power as a factor in evolution. Free will becomes effective through the laws of nature. Point of view of the physiologist.—ED.

TO turn next to the representatives of evolutionary research, it is well known that although there are exceptions, like the late Professor Hyatt, not to speak of the philosophic writers on evolution, of whom Bergson³ is a prominent example, most of the biologists consider the principles of adaptation, chance, variation, mutation, and the survival of the fittest, adequate to explain all the phenomena of the change and progress of the species,* without calling on the coöperation of the conscious will regarded as a spontaneous force. In a very recent address by the English physiologist, Professor Starling, this view of "adaptation" as the guiding angel of progress was definitely maintained. I have no right, from any first-hand knowledge of biology, to express an opinion on this point,

¹ "The Psychic Treatment of Nervous Disorders," by Dr. Paul Dubois, translated by Drs. Jelliffe and White, New York, 1905; cf. also preceding footnote.

² "Die Zukunft der Philosophie," 1907.

³ "L'Évolution Créatrice."

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ing with his practical research, but it is permissible, nevertheless, to inquire into the tendency of his teaching, and if we do this we find that the attitude of many of the great investigators in biology is in favor of regarding consciousness as an incident of brain activity. Huxley's automaton is still their conception of the real man, though made up with a knowledge and a skill unknown in Huxley's day. The eminent biologist, Jacques Loeb,* to whom every physician stands in debt, is a typical example of this class of man, and I shall touch here upon a few of his remarkable conclusions, partly because of their immense intrinsic, practical interest, partly because they constitute one of the most striking and most fruitful attempts to make a thoroughgoing application of simple, comprehensible, and, in a way, familiar scientific principles, partly, again, because his confidence in the universal applicability of these principles makes him a fitting illustration of the materialistic tendency of which the influence is so strong among truth-seeking naturalists, even of the present day.

Teaching of Jacques Loeb

LOEB¹ begins his splendid description of the development of the brain by pointing out, more fully than other men have done, that the existence of a nervous system is not indispensable to any of the important functions whose labors it helps so largely to facilitate. It makes every function more elaborate and its performance more speedy and more thoroughly coördinated with the rest, but perhaps adds nothing absolutely new.

This is a conclusion with a double bearing. Its acceptance makes it easier for Loeb to show the likeness between the simpler processes and the more complex, and thus prepares the way for the conception that the same chemical laws rule both, but it helps also to the belief that with organized beings functional achievement goes constantly a little further than the corresponding structure warrants, and so makes us more ready to listen to the arguments for the constant presence of a certain impulse pushing toward improvement. Each man's daily observation of himself reveals a being

¹ "Comparative Physiology of the Brain," 1900; "The Dynamics of Living Matter," 1906.

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apparently striving to do something which up to that moment he had been unable to accomplish. And provided we can once gain footing for the view that the conscious voluntary efforts of attention which *seem* to be the controlling factor in this result are really spontaneous and actual factors in the issue, we gain the power to form purposes not only for ourselves but in a rudimentary form, for every creature capable of change and progress.

Loeb's Explanation of Behavior

LOEB'S main service perhaps consists in bringing evidence from observation and experiment to show to what length chemical and physical processes may truly be invoked to explain "behavior" even of a complex sort. Recalling how some of the simpler types of animals seek the sun, others the earth, how others must press themselves against some solid object, and pointing out that they obey these impulses as if driven by necessity, and sometimes to their detriment, he traces with remarkable ingenuity, skill, and knowledge the physical and chemical principles under which these results occur. Passing on from stage to stage to more and more elaborate forms of conduct, he shows how the assumption at any given point of the directive influence of a spontaneously active consciousness would be a superfluity and an intrusion of the law of parsimony of nature. For nature is lavish only when lavishness is indispensable and aims always to avoid a needless duplication. Thus when the caterpillars just emerging from the ground in the springtime flock to the topmost branches of the tree where the first young buds are to be found, they do this impelled by a series of attractions (or "irrigations") of which the chief ("helioirrigation") is the necessity to seek the sun. They do so not because they will, but because they must, almost as inevitably as apples float in the water where a stone is thrown.

But Loeb, the discussion as to "intelligence" are wordy and sterile,¹ and in the introductory chapter of his later book² he asserts, in effect, that the same physical principles probably govern the seemingly spontaneous actions of living beings and the opera-

¹ "The Knowledge of the Brain."

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tion of machines that man can make.¹ Thus the myth of Pygmalion and Galatea finds itself reproduced by modern science.* The suggestion is a specious one, and its refutation is more easily made on other grounds than those of biological observation. For, looked at in a purely objective way, and traced backward to its origin, every thought and action is seen to have its predecessor, and the principle of association indicates, and seems to explain, though in fact it does not explain, the bond between these associated acts.

Sherrington's Investigations

The constructive investigations of Sherrington concerning simple reflex movements. Bergson's theory of the indeterminateness of reactions of inert matter. His belief in the divergent trends of instinct and intelligence.—ED.

I WILL mention one more of the great constructive physiological investigations which, like that of Loeb, is so far reaching as to furnish a set of complete materials for the construction of the active but the will-less automaton. This is the research of Sherrington,* the well-known physiologist of Liverpool, who has taken the simple reflex movement (such as occurs in men when the eyelid is touched, or the sole of the foot stroked, or those through which automatic swallowing goes on) as the basis of his scheme, or the center of his inquiry, proving how by the elaboration of these reflexes, reënforcing or checking or modifying each other, as the case may be, complex and apparently purposeful reactions are brought about—the simulacra at least of those of spontaneous, voluntary life. For these reënforcements, modifications, and checks are furnished by the movements themselves, excited by the pure necessity for adaptation to a varying environment, as the animal lives on, and so again, the need of spontaneity, regarded as a special power, seems to be set aside. Even the physical complex of emotion can be regarded as a "reflex," and reasons are shown for the supposition that it may occur independently of the mental state. Sherrington, like Loeb, waives as not germane the deliberate discussion of the doctrine of spontaneous intelligence, but the tendency of his teaching is not far to seek.

¹ I must assume that the reader is aware that Loeb has shown that the egg of the sea urchin, etc., can be made to develop independently of fertilization.—J. J. P.

If a logical order was being followed we should next consider the attitude of psychologists, but this is of such great importance for our needs that I defer it for the present. Suffice it to point out that as most psychologists are close students of philosophy, the recognition of the force of arguments such as those of which I next shall speak, commonly shows itself, although in widely varying degrees, in their discussions. It is usually recognized that psychology and philosophy can be treated separately to a certain point, but not beyond. The intimate study of the mechanism of the mental life constantly suggests the reality which permeates and transcends it. Thus Royce¹ decides that a fair estimate of the causes of animal behavior makes it clear that, prearranged as many of their actions might be held, the element of spontaneity cannot be excluded.

The Views of Bergson

A POSITIVE contribution to the discussion at this point is furnished by the keen philosopher-psychologist, Bergson.² The primary effect of "life" in all its forms, for him, is to give an element of indeterminateness to the reactions of inert matter. A stone is struck and it rebounds with such and such a force; a given weight of water is decomposed and makes just so much gas.³ But no one can predict just how an animal, even the simplest, may react, because it is "alive" and has a "history," a rudiment of memory, a trace of power to penetrate the secrets of its environment, to estimate a portion of its real meaning, an obligation to make the first glimmering of a "choice" between alternatives and in the midst of conditions such as (if we include the creature's private experience) never presented themselves before. The difference between the reactions of this creature and that of a stone may appear as narrow as a knife blade, but is, in fact, gulf-wide. It certifies the entrance into the world of liberty and reason to be endowed later with the privilege of asserting themselves by deliberately denying liberty and reason.

¹ "Outlines of Psychology."

² "L'Évolution Créatrice."

³ The discovery of radium has upset to some extent the confidence of physicists in "laws,"—J. J. P.

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But presently, as we glance upward through the scale of animal forms, the stream of life seems to divide into two quite divergent currents, respectively named instinct and intelligence. The organisms that the former current sweeps along thenceforward do not "think out," but "act out" the "indeterminateness" presented to them with life, and thus acquire a marvelous power to penetrate, although with hardly a rudiment of purpose, certain special mysteries of nature, and show thereby a skill which the intelligence of man, armed with all the weapons of research, follows with halting step. But, as if in payment for these gifts, the ant, the bee, the parasite that knows just where to bore the oyster's shell in order to reach and destroy the muscle by which his fortress is secured, abandon forever their right to think and so advance. The path to "intelligence" does not lie through instinct nor are the arguments conclusive that instinct is a degenerate intelligence.

The Rise of Intelligence and Faith

QUITE the contrary is the history of the organisms that contained within themselves the power to float upon the second current of the dividing stream of life. To gain the right to think, to gain a wider choice, they were forced to court failure, and sacrifice skill, and abandon the hope of certainty. But for this sacrifice they received the immeasurable compensation of the chance to force their way, painfully, forever after, through thick forests and over heights where no foot ever preceded them, and to enjoy thereby a growing sense of strength, the perception of a light breaking on the darkness, a feeling of constantly increasing companionship, a confidence that, in some sense, their toilsome yet repaying journey would have a reasonable end. Upon this journey they were obliged to carry great burdens of habits and instincts which in a way impeded their progress, yet without which they never could have proceeded, and in fact they had to make new habits of these sorts at every step.

Thus do explorers of a strange country load themselves down with food and tents and spend much of their strength in devising and creating ways to enable themselves to progress still further. The

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of progress utilized by the organisms which developed in the world thus traced have been intelligence on the one hand and "intuition" or "faith," foster-sister at once of reason and of instinct, on the other. It is well known to students of philosophy that the "possibility of error" has played a notable part in philosophic speculation, and it is evident that the part it plays in the history of progress under the guidance of intelligence and faith has been equally significant. It might seem to some readers that "faith" had no place in such a scheme as this of Bergson's, which claims to be rigidly logical and scientific. But many careful students, and among them the cautious critic and philosopher, Immanuel Kant, think otherwise; according to his able interpreter the late Professor Paulsen.¹

These two last-mentioned writers stand as representatives of many who feel and think that beyond the limits of certainty lies a land of reasonable probability² which every man may enter, but must enter at his peril. So in Schiller's poem the traveler is conducted to the brink of the wide river beyond which lies the land of promise, and there is made to say:

"Einen Nachen seh Ich schwanken,
Aber, ach, der Fährmann fehlt.
Frisch hinein und ohne Wanken
Denn die Segeln sind beseelt.
Du musst glauben, du musst wagen,
Denn die Götter leihn kein Pfand;
Nur ein Wunder kann dich tragen.
In das schöne Wunderland."³

The Philosophy of Idealism

The philosophy of idealism in its relation to physical and biological research. Elements of rationality and order to be found in the individual. Virtual agreement of common sense and idealism.—ED.

UP to this point I have considered certain arguments relating to the problem of human life, in so far as they centered on the outcome of physical and biological or physiological research.

¹ "Die Cultur der Gegenwart," vol. iv. "Die Zukunft der Philosophie."

² "Vernünftige Ideen." See also William James's "Will to Believe."

³ For a translation of this poem see notes at the end of the article.



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It remains now to inquire what sort of light modern philosophy, and especially the philosophy of idealism, throws upon these questions.* It is not an argument, but certainly a fact, that the mind of everyone instinctively revolts from the attempt to define in any given case one of the higher feelings of the mind in terms of the muscular movements and chemical operations employed in its expression. This revolt is amusingly suggested by the first verse of Dr. Holmes's little poem called "The Philosopher to his Love":

"Dearest, a look is but a ray
Reflected in a certain way;
A word, whatever tone it wear,
Is but a trembling wave of air;
A touch, obedient to a clause
In nature's pure material laws."

The God of Faith

ONE may ingeniously argue himself into the view that if he could *really* discover all the physical elements involved in such emotions as Dr. Holmes refers to he could get at the emotion in all its value. But the conclusion surely would be incorrect. The expression does not contain the emotion, but only hints at it. Even the Parthenon did not adequately express the sentiment of its architect. The "philosopher" and "his love" had, let us say, the same ideal meanings, and the "look" was sufficient to recall it to them both. In the world of nature the same principle holds true. If the orderliness of a well-arranged apartment means a sense of order in the mind of a person like ourselves, the owner of the house, so the consistency of nature, the very "laws" which we so much admire, imply at once a sense of consistency and law within our minds and in the mind of another personality, unpicturable in essence, as our minds likewise are unpicturable, but constituting the God of intuition and of faith.

The argument could be pushed much farther and it could be shown that the world is a world of personalities and of personalities alone, but I can only hint at the grounds of this development of the subject. My object is to reënforce the doctrine—which common

sense inclines already to accept—that the world is demonstrably a world of rationality and order and presumably of goodness, and that it rests with each person who desires to find the elements of rationality in the universe to seek them in himself. It must be understood that such seeking means also learning to express, for without expression neither accurate thought nor feeling can exist. Of course, it is true that while we must accept the world as rational, in the sense of nonchaotic, we are not compelled to find it to our liking. The picture which the artist finds adorable the public may abhor although admitting it to be intelligible. Sickness is often a miserable infliction at the best, and cruelty exists and challenges us to explain and to expel it. On the other hand, the great parable of Job is full of meaning, and neither the lessons of illness nor the heroism of invalidism could be spared from out the world.

Idealism and Common Sense

IT is felt by some persons that to accept the doctrine of idealism and thus to retranslate the solidity and reality of nature into "states of consciousness" would be to annihilate reality in the interests of a foolish sophistry. Thus a recent writer upon medical subjects,² and one whose books and personal influence are rated high as giving evidence of the value of appeals to personal responsibility and free will, spends many pages to prove the justice of "determinism," and rejects the idea of being ruled by "hallucinations" as the theory of idealism, he thinks, demands. But in this respect idealism does little more than state in other terms the facts agreed upon by common sense.

The solidity of nature is universally admitted to be a system of vibrations, which in themselves have neither warmth nor color and no form corresponding to the objects with which they play in connection. Within the brain these vibrations again undergo change and come perhaps to deserve a chemical name. Even with this primary admission we abandon the assumed solidity of nature. It is obviously necessary that anyone who would see unity and beauty in the blue sea and sky, the lofty mountains, the far-stretching land

²Johnson, "The Psych. Treatment of Nervous Disorders."

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scape, should seek it not in any systems of soulless and infinitely divisible vibrations, but rather there where alone unity exists—namely, within his own indivisible and personal consciousness. There alone resides the power of rational and purposeful interpretation of the purposed and rational hieroglyphs of nature.

Pragmatism and the Doctrine of a Rational Universe

Pragmatism. Schiller's theory of God as a model for mankind, not as a creator. Freedom of the will misunderstood.—ED.

IT is well known to readers of philosophy that under the designation of "pragmatism" views have recently been presented, criticising, in a sense, the doctrine of a rational universe in so far as this doctrine is taken to imply that "everything which is, is right," and that human sins and virtues, efforts and indolence, are like so many bits of glass in a kaleidoscope, to be shaken about so as to produce varying effects, ugly and beautiful, either result being "all one" to the "absolute" clearing houses where all accounts are warranted to balance. I do not understand that such objection would be made against anything here said.

But, however that may be, it is an extremely interesting circumstance that one of the most keen and at the same time the most critical exponents of this modern "humanistic" or "pragmatic" school of thought, F. C. S. Schiller, a strenuous advocate for the creative significance of human life and will, but strenuously denying as unproved the doctrine that the universe is the expression of an all-embracing personality, accepts the possibility of a "God," as existing, not as a creator of the world, but as a model for mankind. In an essay remarkable in form and matter¹ he expounds his reasons for this view, and thus far, at least, substantiates the opinions here expressed.

Freedom of the Will

BUT how and in what sense can it be said, under the protection of philosophy, that we have the precious but dangerous Midas-touch called freedom of the will? To state the arguments in a con-

¹ "Humanism, Activity and Substance."

vincing form would be impossible in this place, and the reader is referred, among other sources, to the "Personalism" of Professor Bowne, which should be read entire. The difficulties arise largely from misunderstanding of the facts. It should be realized that no one assumes the existence of an absolute freedom in the sense of license to infringe the laws of nature and of thought. But in the observation of nature we find a certain need of spontaneity; under the teachings of philosophy we are led to believe in "self-activity" as a primary, unanalyzable fact; through metaphysics we learn that the "causality" of nature is not explained by materialism, is only stated in the form of invariable (?) sequences by science, but really exists for the unifying power of consciousness. With these brief hints the vast subject must be abandoned.

The Key to Human Life

The world of science a poor substitute for the world conceived by the human consciousness. The idealist's world one of values and persons. The world of faith. Impossibility of living wholly in any one of them. We must live in all three, passing unceasingly from one to another.—ED.

IN our endeavor to find the best key to human life we have traveled hastily over several paths, some of which seemed to lead in different directions. Can we, as conscientious men, choose either to the exclusion of the rest, or must we wander to and fro, as the needs of the particular situation urge, abandoning all hope of picturing to ourselves a certain goal? At first sight the students of the exact sciences seem safe guides. But in fact the worlds conceived of by biology and physics are but fictitious and conventional figments. The materials for their construction are but heaps of atoms, piles of stones, with nothing between them but blind "forces," really another set of "facts," a poor substitute for the human consciousness heaving with emotion. If the atoms are assumed to be soulless the complicated heap contains no germ of sense or progress; if each one has an independent consciousness chaos must come through mixing them. In denying reason as a principle transcending matter the materialist saws off the branch on which he sits, for without reason he could not have rejected reason.

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The Idealist's World

IF now we turn wholly to the opposite path and seek the world of the idealist, we seem at first to find our longings satisfied. We are now in a world of "values," and one in great part approved by common sense. The heaps of atoms and of forces suddenly take on a meaning which allures our senses, assures us that we have a unified and unifying personality, and challenges our reason to search unceasingly for more meaning than is at first revealed. Thus led on we presently find the object of our search to change and to assume a "personal" form and to tell us something (hinting more) of other personalities besides our own. We find ourselves in a world of "persons," and the streams of atoms and of forces are signs and symbols of the constructive, purposeful activity of some unifying consciousness, partaking, like all symbols, of the actual nature of the thing they stand for.¹

This cataract of waves, assumed to be but particles of inert matter, reveals itself as human voices instinct with reason and emotion. In lieu of "sequences" we find causality and creation actually at work. We see a body of public-spirited merchants through whose united and yet free and independent efforts, consciously directed toward an end, streams of commerce are gradually led to flow around the city where they live and work. And we discover that the factors in this process are activities in human minds, susceptible of being grasped, in their essential features, in one great yet simple unifying effort of one mind and conformable to the conceptions of idealism alone. Then we become dissatisfied with the device of an "associative memory," behind which is nothing suggestive of a purpose.

The World of Faith

WE discover further that this dissection of a work of nature or of man into infinitely divisible and mutually excluding parts is, to our surprise, a conventional artifice, man-made, as if in our desire to study the work of a great artist we should begin by cut-

¹ See Nettleship, "Letters and Essays; Spirit."

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ting his picture into little squares. In order to learn, by this method, we at first destroy, oblivious or ignorant of the fact that in reality it is the *mind* of the artist that we care about, the indivisible wealth and power and beauty of which the picture (like the glance passing between the philosopher and his love) does but suggest and not exhaustively reveal. The picture hints at a thousand pictures, common in part to us and him, and it is the longing better to realize these that makes us admire and seek to penetrate the secrets of this one. Thus we are drawn by contemplation of the artist's mind, interpreted to us by the unlimited resources of our own, to catch a glimpse of real freedom, real causation, real purpose, and eventually of a great, single purpose expressive of a great single personality underlying the whole world scheme. In such a single purpose time and space entirely disappear, just as with us they partially disappear when we unite things remote and near in one grasp.

"The mother's *here* is everywhere;
Time's fancied flow is her timeless *now*."

We Must Combine Varying Views

AND yet, when we strive to live wholly and permanently in this new-found, timeless world of "values," we find that it is impossible. Our habits and associations are too strong. We must accept the physicist's devices as admirable and indispensable, even when we cast aside their claim to represent reality. We cannot bear to lose—even to grasp it again clothed with a higher meaning—our world of color, warmth, and form, of "forces" and of "things." Then when we try to read the inner meaning of the universe, in the hope to find it wholly "good," we often stagger back dismayed, finding the task too difficult for reason, difficult even for faith. Also, although we must admit that "time" and "space" disappear as logical conceptions—incapable of independent life—yet except in a time and space world we cannot breathe. And so, finite and illogical creatures that we are, we find that we must live in both worlds, or rather in all three—the world of science, the world of unifying and creative consciousness, and the world of faith. From

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one to another of these worlds we must pass unceasingly, even though at times we seem to be only leaping from one floating ice cake to another in a limitless sea. But as we thus pass between these apparently irreconcilable worlds, the transition becomes gradually more easy, our steps become firmer, the scenes of each become more familiar and more homelike, and each passage gives us new insight into the meaning of the next.

Conclusion

WITH all these facts in mind indicating the sources of our knowledge with regard to human life, we may again revert to our first question, What powers and qualities make up the healthy and efficient man?

That portion of the answer which psychology must give will be attempted in another article. So far, let it be understood that any intelligible statement must represent him, first, as subject to tendencies and habits disclosed with such remarkable penetration in the work of men like Sherrington and Loeb. Next, he must be thought of as a person capable of adding something, out of his own experience and spontaneous creative power, to the influences which form his habits, and of focusing the resources accumulated in the past upon the necessities of the present. Finally, he must be shown spontaneously creative, as in play and art, and capable of purpose, responsible, in loyalty, to communities of widening magnitude, and to ideals of infinite significance. His personality must be shown to be limited not by his body, but only by his interests, by all the experiences which he can entertain and unify or gather into one grasp. He must be shown constantly growing, and for this growth throwing his whole experience of the past and his forecast of the future into the crucible of his purposes and his faiths.

James J. Putnam.

Editor's Summary

The purpose of this article might be said to be to answer the question, "What optimistic and encouraging message have natural science and philosophy to give with regard to human life?"

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Professor Putnam points out that we need to seek help from a right philosophy. Physicians especially must learn to combat pessimistic doctrines.

The writer puts the prevailing teachings of science in regard to human life into three groups: (1) The doctrines of the physicists, (2) the doctrines of the biologists (or evolutionists), and (3) the doctrines of the physiologists.

Professor Putnam then finds that the conclusions of the exact sciences give us worlds that are but "fictitious and conventional figments." He finds that the materials for their construction are "but heaps of atoms, piles of stones, with nothing between them but blind forces."

To these conclusions of materialism Professor Putnam opposes the philosophy of idealism. He shows that this is in virtual agreement with common sense, and that it gives value to the elements of rationality and order found in man.

But Professor Putnam finds, further, that the intellectual conceptions of a hopeful philosophy are not alone sufficient. We are driven, he tells us, to the world of faith.

Again, Dr. Putnam points out that even faith is not completely satisfying. We cannot ignore the facts of science and of reason.

Professor Putnam concludes, therefore, that we must endeavor to live in all three worlds, "the world of science, the world of unifying and creative consciousness, and the world of faith."

The healthy and efficient man, then, Professor Putnam holds, must be thought of as capable of growth, of spontaneous creative power and purpose, able to benefit by experience, and to unite himself in common effort to wider interests. This idea of human life is in line with the purpose of psychotherapy in that it provides a foundation for hopefulness and courage. It makes for the development of sanity and effectiveness.

Notes and Collateral Reading

[Numbers refer to pages in text]

Purpose of Dr. Putnam's articles

17. One purpose of this series of articles is to call attention to some of the bearings of philosophy and metaphysics upon the practical problems of biology, psychology, and medicine. It is a common view among biologists and physicians that no such bearings exist, but I think this opinion is due partly to the neglect of recent publications, partly to the fact that there have been but few writers who could speak authoritatively for philosophers and scientific men alike.

This latter need has recently been met, in great measure, by the writ-

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ings of the able student Bergson, which are sure to impress if not convince his readers, and might well turn the tide of thought in new directions. Although I cannot summarize here his careful reasoning, I shall call attention to certain of his teachings, together with some of those of the modern representatives of idealism.

This first article will briefly present some of the contrasting views on the nature and origin of consciousness and organic life—the problem of materialism versus idealism—and the next will deal with the organization of the individual.

—J. J. Putnam.

Ostwald

21. Dr. William Ostwald was born at Riga, Russia, September 2, 1853. He was Professor of Chemistry at the University of Leipzig from 1887 to 1906, and in 1905 had the distinction of being the first "exchange professor" at Harvard, under the system whereby prominent professors of Harvard University and of Germany exchange places temporarily to facilitate mutual understanding, and to share the progress of the two countries in learning. Dr. Ostwald has written several important works on chemistry. He was one of the founders of the "*Zeitschrift für physikalische Chemie*," and the founder of "*Annalen der Naturphilosophie*." In a more popular vein are his "*Vorlesungen über Naturphilosophie*" (Lectures on Natural Philosophy).

Ostwald's and Loeb's Opinions

21. I desire at this point to make it perfectly clear that my criticism of Ostwald's and of Loeb's opinions with relation to the physical basis of mind is to be taken as valid only on the assumption that those opinions are offered in a materialistic sense—i. e., as meaning that there is nothing behind "force" but "matter," and nothing behind "matter" but, again, "force" or "natural law." This view is definitely opposed to the opinion of "idealism," which is prepared cheerfully to accept the judgment, if substantiated, that "matter" may be an antecedent form of "life," but only in the sense in which, as Caird says ("*Philosophy of Religion*," pp. 115 ff.), "It is true that in the first prelude of the symphony we have the promise and potency of the whole symphony, in the first faint touch impressed on the canvas by the hand of genius, the promise and potency of the magnificent and finished work of art." In this sense life would not be degraded to matter, but matter elevated to the dignity of life. Matter would not be *lower*, but simply *first*, as the germ cell is not lower, but only first.

—J. J. Putnam.

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Organic Memory

23. It is one of the many signs of the gradual infusion of a more philosophic spirit into the domain of physical science, that the conception of "memory" ("organic memory"), as an explanation of the perpetuation of organic variations, is being substituted among advanced thinkers for earlier terms having a narrower and more technical connotation. (See Ostwald's Ingersoll Lecture on "Immortality.") —J. J. Putnam.

Loeb

25. Jacques Loeb, M.D., Professor of Physiology at the University of California, has become most widely known for his investigations bearing on the problem of creating life artificially. He was born in Germany, April 7, 1859, and studied medicine at the universities of Berlin and Munich. From 1892 to 1902 he taught physiology and experimental biology at the University of Chicago, holding the professorship in this department in 1900-2. He then went to the University of California. Among his writings are: "The Heliotropism of Animals," "Comparative Physiology of the Brain," and "The Dynamics of Living Matter."

Living Organisms as Machines

26. In these lectures we shall consider living organisms as chemical machines, consisting essentially of colloidal material, which possess the peculiarities of automatically developing, preserving, and reproducing themselves. The fact that the machines which can be created by man do not possess the power of automatic development, self-preservation, and reproduction constitutes for the present a fundamental difference between living machines and artificial machines. We must, however, admit that nothing contradicts the possibility that the artificial production of living matter may one day be accomplished.

—Jacques Loeb, "Dynamics of Living Matter."

The Artificial Production of Life

27. Loeb makes the artificial production of life the goal of biological experiment.

"Biologists are confronted," he says ("Dynamics of Living Matter," 1906, p. 223), "with two problems of transformation—namely, the artificial transformation of dead into living matter, and the artificial transformation of one species of plants or animals into another. Will it be possible to solve these problems? It is certain that nobody has thus far observed the transformation of dead into living matter, and for this reason we cannot form a definite plan for the solution of this problem of transformation."

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But we see that plants and animals during their growth continually transform dead into living matter, and that the chemical processes in living matter do not differ in principle from those in dead matter. There is, therefore, no reason to predict that abiogenesis is impossible, and I believe that it can only help science if the younger investigators realize that experimental abiogenesis is the goal of biology.

"As far as the second problem of transformation is concerned—namely, the transformation at desire of one species into another—conditions are more favorable since De Vries has succeeded in actually observing the transformation of one species into another."

Sherrington

27. Charles Scott Sherrington, M.D., LL.D., F.R.S., is Professor of Physiology in the University of Liverpool. He has repeatedly been the Anglo-American secretary of the International Congress of Physiology, and was Silliman Memorial lecturer at Yale University in 1904. He is the author of "The Integrative Action of the Nervous System," and of numerous scientific papers on the brain and nervous system.

Faith that Ventures All

30. The lines from the German poet Schiller quoted by Professor Putnam as illustrating the mood that dares to venture all upon faith have been translated as follows:

"See—a bark is drawing near,
But, alas, the pilot fails!
Enter boldly—wherefore fear?
Inspiration fills its sails,
Faith and courage make thine own—
Gods ne'er lend a helping hand;
'Tis by magic power alone
Thou canst reach the magic land!"

A Few Authorities

31. In endeavoring to find an answer to this question, I follow principally such well-certified authorities as James ("The Will to Believe, Pragmatism," and various other writings), Royce ("The World and the Individual," "Essays on Good and Evil," etc.), Paulsen ("Die Zukunft der Philosophie," l. c.), Bowne ("Personalism"), and Bergson ("L'Évolution Créatrice"), while at the same time offering them an apology for my very incomplete and perhaps inaccurate reference to their views.

—J. J. Putnam.

The Next Article

EDITOR'S NOTE.—It is a striking fact concerning psychotherapy that in principle it is as old as civilization, and perhaps older. While religious therapeutics are as new as the Emmanuel movement, they are as old as the Bible, and—to accept the suggestion of Dr. Batten in the following article—as old in some of their methods as Adam. It will be a portion of the task of this course of reading to present the history of psychotherapy in its remote beginnings as well as its most recent applications. These historical accounts will open with two articles by the Rev. Dr. Loring W. Batten telling the story of healing in the Old Testament. In the first of these, the present article, we are shown some typical cases of sickness recounted in the Bible in which spiritual influence, or at least the belief in such influence, may be traced. Sickness as the scourge of God, as divine punishment for the sinner, is a topic around which are built some of the most dramatic and appealing narratives of the Old Testament. Dr. Batten has given to his selection of such incidents the interpretation of critical scholarship.

HISTORICAL SECTION
ARTICLE I

Healing in the Old Testament¹

By THE REV. LORING W. BATTEN, PH.D., S.T.D.

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Old and New Testament Differ as to Healing

IN undertaking the study of healing in the Old Testament and the New, one is impressed with the comparative scantiness of the material in the former. The shortest of the Gospels covers nineteen pages in the Bible before me; the Old Testament extends to eight hundred and fourteen pages in the same book. Yet there is more material for the study of healing in St. Mark's Gospel than in the whole of the Hebrew Scriptures. Sometimes when we read the Gospels it seems as if there was little else than the miracles of healing. We may be sure that the evangelists have sacrificed the true proportions of the life of Jesus, giving undue prominence to his healing ministry, because they were most deeply impressed with that particular manifestation of divine power.

But in the Old Testament, too, we have a record of what God did for men. The many writers who shared in the composition of that great collection of books eagerly searched the records for events in which the divine hand was conspicuous. Yet they rarely mention a case of recovery from sickness. Still it is certain that such events happened. The material is scanty, but there are some good cases. We have to believe, then, that striking cures were very rare, or else made little impression. The latter could scarcely be the true explanation; for a marvelous success in healing would be regarded as a proof of the power of God; untimely death was

¹ See editor's note "The Next Article" on preceding page.

regarded as a great evil, and long life one of the most coveted of divine blessings. Health was highly valued and sickness correspondingly deplored. Besides, the few cases we have, show how highly successful healing was valued. The explanation of the paucity of our material must, therefore, be the fewness of the cases.

Gospels Personal, Old Testament National

ANOTHER point of comparison merits consideration. The Gospels are biographical, dealing with the teaching and deeds of a single unique personality, while the Old Testament is national in its interest and aim. The condition of the whole people was very largely the subject in the writers' minds. Even in many passages of the Psalms and Prophets, in which an individual is the subject, it is now generally held that a person is only the apparent subject, while the real concern of the writer is the nation of Israel, which is personified as an individual. Still there is a good deal of true personal history, and the silence remarked is pretty sure proof that what is called miraculous healing was rare among the ancient Hebrews.

Belief that Disease was Sent by God

THE supreme interest in most conditions lies in their causes. We are never satisfied until a thing can be tracked back to its origin. This is especially true of pathological conditions. If a person catches cold, he can never rest until he has traveled back to a draught, damp feet, or something of the kind, upon which to lay the blame. It is true that his quest often takes him far from the right beginning point. But still he is quite satisfied with his error, so long as he is ignorant of its falsity. This characteristic is not modern or American, but is found among all peoples and in all ages. It was as marked among the ancient people of God as among ourselves. When disease befell them, they, too, sought an answer to that insistent query, whence did it come?

In seeking the reply to this question there is no dearth of material. On the contrary, little as we find about healing measures, information abounds on beliefs as to causes of diseases. But

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the faith of Israel was contained in a simple creed in this matter, and the whole belief may be put into a single sentence: all sickness is directly sent of God.

Illustration from the Book of Job

WHAT idea may be abundantly illustrated. A few cases will be cited, and those selected somewhat with reference to the side light they throw upon other aspects of our subject. Let us take first, then, the celebrated case of Job.¹ The wonderful book which contains his history is largely a record of a controversy between Job on one side and his so-called friends on the other. Job was stricken with elephantiasis, the worst form of the terrible leprous scourge. Job and his opponents differ about almost everything they discuss. But they agree in this one point, that this fearful affliction was of God. It is needless to quote, for we might cite a large part of the book. A marked difference arises, though, the moment an attempt is made to go farther back and ascertain why God had sent such a catastrophe. The opponents say, and here they are in line with the orthodox creed, that God laid sickness upon the sufferer as a punishment for his sins. Job stoutly insists, and the heterodox author of the book agrees with him, that he had done no sin, and that God's visitation defied that easy explanation.

Jehoram and David Afflicted by God

JEHORAM, the son of Jehoshaphat, the King of Judah, died after suffering for two years from a terrible disease of the bowels (II Chr. xxi, 19). The disease was explained in a letter from the prophet Elijah as due to the wicked and idolatrous reign of the king (ib. vv. 12-15). Indeed as the text stands the prophet predicted that Jehovah would plague the king with great sickness; but we need not press the time element. The prophet may rather be accounting for a condition already existent. The prophet was

¹ The book of Job is, of course, not historical, though the drama may be based on actual events. But for our purpose this is immaterial. We are after ideas, not historic facts. The drama shows the beliefs of the people.

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Great Pestilences Sent from God

EVERY great pestilence which scourged the Israelites or their enemies was explained as a divine punishment. There was a frightful epidemic which devastated the land in the time of David. The prophetic historian, seeking an explanation of the plague, based on the general principle prevalent among the Hebrews, found the cause in a census which the king had ordered (II Sam. xxiv). Similarly the bubonic plague, which swept over the Philistine country after one of the successful wars with Israel, was attributed to the indignity put upon the ark of Jehovah, which was placed as a captive in the temple of Dagon (I Sam. v). So the great army of Sennacherib, which, according to the story found in Herodotus, was annihilated by pestilence, was exterminated, according to the Hebrew historian, by the angel of Jehovah on a night visit to the hostile camp (II Kings xix, 35).

Sickness as the Penalty of Sin

FROM the cases cited it will be evident that there was no necessary relation between the sin and the special form of punishment. If sickness was the penalty, there might be any kind of plague or disease following any kind of sin. For one of David's wrongs, his child was stricken with fatal illness; for another, the people of the whole country were visited by a plague. Nevertheless, there is a hint at truth in this conception, erroneous as it was when literally pressed. The passage cited from Deuteronomy would stand to-day, if we put a different construction upon the term *law* from that of the Hebrews, different doubtless from the intention of the writer. For virtually all sickness is the result of the violation of the laws of God, since the so-called laws of nature are as truly the laws of God as the Ten Commandments.

There is, however, a necessary relation between the transgression and the penalty; the ailment is that which is the sequence of the sin. There is another principle in the application of the divine

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order, and that is that ignorance of the law is no excuse for its violation. The ignorant person is just as liable to a contagious disease as a bacteriologist. Sometimes a small amount of knowledge is a dangerous thing, for it engenders fear, and that quality greatly enhances liability to disease.

The Hebrew Attitude toward Sickness

FROM the fact, which has now been abundantly established, that sickness was supposed to be sent as a penalty for sin, we might expect a sort of fatalistic attitude toward it when it came, as if God had sent it, and God would take it away when he saw fit. And that opinion is held by some authorities. But such is not the case; for the universal human craving for prognosis, the foretelling of the course of a disease, is clearly discernible among the Hebrews. Even though God sent an illness, there was ever a feeling based on experience that the trouble might be taken away.

This yearning to know the outcome must be the bane of the physician's life. One of the most insistent questions asked by those trembling at the bedside in case of serious illness is: "Will he get well?" That insistence is born of a sound human feeling, for the relief is unspeakable when the verdict is pronounced, "The crisis is passed, and recovery is merely a question of time"; and the distress is almost unbearable when the unfavorable judgment is given, "There is no response on the part of the patient, and the danger is very imminent." Still the physician dislikes to give an adverse opinion, for he knows the bad influence it exerts both upon the patient and upon his friends. But everyone who attempts to relieve suffering knows that the inquirer will not be denied.

The Hebrews did not beset the physician so far as we know. Whatever knowledge and skill he may have possessed were devoted to healing and not to forecasting. And there was another body reputed to possess ability to penetrate the veil which usually screens the future so effectively, and so recourse was had to the prophet when prognosis was the supreme need.

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Prophecy and the Outcome of Disease

JEROBOAM was the first ruler of the northern kingdom. Acting under the inspiration of the prophet Ahijah, he had successfully revolted from the sway of the Davidic dynasty and established an independent empire. But, unfortunately, his rule had not held true to the principles upon which it was begun, and there befell an occasion when conscience awaked and began to prick him sorely. That occasion was the grave illness of his child, Abijah, probably the heir-apparent. The king believed that the disease was a punishment for sin. He had discernment enough to realize that the sin of a young child could hardly account for the calamity which may have threatened the extermination of the royal house at its very beginning. Further, he probably believed that the depth of God's displeasure would determine the issue of the sickness. Therefore he sends his wife to Shiloh, to the now aged and blind seer, to learn from him whether or not the child would recover (I Ki. xiv, 1-3). Perhaps no message would have so forcibly brought home to the king his unrighteousness as that of the venerable prophet to the king's messenger: "Arise and get thee to thy house: and when thy feet enter the city, the child shall die" (ib. v. 12).

Ahaziah, a later king of Israel (about 850 B.C.), was dangerously injured by a fall from the upper part of the palace. What was done for the healing of his wounds we are not told. The interest lay in the question whether his hurt would prove fatal. But this apostate king did not seek the desired intelligence from a prophet of Jehovah, but sent a deputation to make the needful inquiry of Baalzebub, the god of the Philistine city of Ekron. The prophet Elijah, being advised of the dispatch of the embassy, goes to meet the royal messengers, and tells them to return to their master with the prognosis from an offended God, that because the king had sought intelligence from a heathen deity, he would never arise from the bed upon which his wounds had placed him (II Ki. i, 1-4).

The Prophet Elisha's Knowledge of Sickness

THE same yearning for the knowledge of the outcome of serious illness appears among the closely related Arameans. The prophet Elisha for some reason made a journey to Damascus. While he was there Hazael, an officer of the king Ben-hadad, was sent with the familiar inquiry whether the king, who was at the time on a sick bed, would get well. The prophet's reply appears to be curiously ambiguous: "Go say unto him, Thou shalt surely recover: howbeit Jehovah hath showed me that he shall surely die" (II Ki. viii, 10). But when Elisha's riddle is correctly interpreted, we get an interesting light on the prophet as a prognostician. As a matter of fact Ben-hadad died; but his taking off was not the result of the disease from which he was suffering; for he was strangled in his bed the next day by Hazael, who had brought the good news from Elisha. The prophet perceived that there was nothing in the king's disease which indicated a fatal termination, and so he said he would recover.

From this it appears, contrary to popular opinion ancient and modern, that the prophet founded his opinion, not on any supernatural knowledge, but upon the pathological condition of the patient. If it be urged that Elisha did not see the invalid, it may readily be answered that the messenger from the bedside could give him all the information needed. The knowledge from Jehovah discloses the ambitious purpose of Hazael, which will not balk even at murder.

Kinds of Diseases in the Old Testament, Leprosy

THE inventory of diseases in the Old Testament is not very large. That is not because of the paucity of disease, but is due to the medical ignorance of the people. New diseases are very rare; for what seems to be a new malady and has a new name is generally but a new differentiation made possible by a more scientific diagnosis. Foremost among the diseases named in the Old Testament is leprosy. There is more about this plague than about

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all other specific diseases put together. Yet the evidence does not indicate that leprosy was very widely prevalent. The frequent mention of it is due rather to the terrible dread of it. *For it was one of the few diseases whose contagious character was generally recognized; it brought the afflicted one such a long agony and such a frightful death; and, finally, it drove the sufferer from the company of all save those in like condition. The slowness of the disease constitutes one of its worst evils. Some lepers have endured the ailment for forty years, and the average course of the plague is about nine years.

Old Testament Diagnosis of Leprosy

THE Old Testament gives an attention to this disease which it bestows upon no others. In Lev. xiii there is a rather remarkable treatise upon leprosy, in the form of directions to the priests for their diagnosis. The symptoms are most minutely described, the various skin diseases which are more or less like leprosy being apparently arranged in seven classes. This law represents the highest point of Hebrew knowledge, and shows that those people were awake to the danger of at least one contagious disease. That law provides that anyone with a skin affection must be taken to the priests for diagnosis.

The matter was not left then to priestly discretion, for the judgment was to be based entirely on the written guide. If the hair in the infected spot was white, and the sore subcutaneous, then the patient must be declared leprous. Should these symptoms not appear, the subject was to be quarantined for as many periods of seven days each as were necessary to determine whether the affection spread below the skin or whether it was arrested. In the latter event the case was discharged. This statement by no means covers all the points that are enumerated, but will serve as a summary. The two signs required to establish genuine leprosy were the whitening of the hair on the sore and the penetration of the affection below the skin.

Leprosy Pronounced "Unclean"

WHEN the priest diagnosed true leprosy, the verdict was usually a sentence of suffering only relieved by death. The condemned one must go forth with his clothes rent, as a sign of his distress; the hair of his head must not be bound up, a mark of humiliation (Lev. x, 6); the upper lip was to be covered with a bandage, a sign of mourning or shame (Ezk. xxiv, 17); he must abide only in unfrequented places, far from the haunts of men; and in case any person unwittingly came near him, he was to raise the cry of alarm, saying, "Unclean, unclean." Doubtless nothing further would be needed to insure isolation.

The pronouncement of the priest was that the leper was "unclean." We are very familiar with the many forms of ceremonial uncleanness in the priestly law. Now, even Dr. Macalister, in Hastings's "Bible Dictionary" (art. Leprosy), deems the leper's uncleanness as ceremonial. That is, I think, a mistake. For ceremonial uncleanness could always be removed by appropriate rites, whereas the uncleanness of the leper could only be escaped by cure. Even death does not seem to have ended it; for, according to II Chr. xxvi, 23, Uzziah, who died in leprosy, was not buried in the royal sepulchers.

Isolation Was Permanent and Distressing

MORE will be said about this subject in another connection. Here it suffices to say that there are two kinds of uncleanness in the Old Testament. One is based on ceremonial considerations, and is temporary. The other is established on sanitary grounds, and is as permanent as the condition out of which it grows. The defilement of leprosy belongs to the latter class. The banishment was due to the necessity of protecting the well, and in those days there were no pest houses nor leper colonies. Even the great King Uzziah or Azariah, who was stricken of Jehovah with the terrible scourge, according to II Chr. xxvi, 17 ff., because he usurped the priestly function of burning incense, but, according to an earlier



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story in II Ki. xv, apparently because he did not remove the high places, even this king was forced to dwell in a "separate house" or infirmary. From the version in Chronicles it would appear that in the time of that writer, 300 B.C. or later, there were houses set apart for those suffering with contagious disease; but probably only the well-to-do could afford such luxuries. Even in a time of siege and famine, the lepers roamed outside of Samaria, and were in great distress for lack of food (II Ki. vii, 3 ff.).

Leprosy Thought Hopeless; but Cures Occurred

ANOTHER point apparent in the law is that no effort was made to cure the disease. The priests sent the afflicted out into the world, branded in every possible way to make him conspicuous, but the law has no word to say about therapeutic measures. The record of the historic cases agrees with this. The disease was regarded as hopeless. There is no record of any attempt at a cure save in the case of a foreigner, Naaman the Syrian, of which more in my second article.

Yet lepers were cured, or at least got well. There is scarcely such a thing known as a uniformly fatal disease. However high the percentage of mortality, there are a few that escape. It is, of course, possible that many claimed cures are really due to faulty diagnosis. The only historic instance of a cure is that of Naaman. It is implied that Job's leprosy was cured, as he was restored to society. The author of the appendix was so concerned with the restoration of the property that he overlooked the sore disease. This is, of course, not a historic case; but it establishes the conviction that leprosy was sometimes cured. Then there was a regular provision in the law for the discharge of a healed leper by the priests (Lev. xiv), a system still in vogue in New Testament times (St. Matt. viii, 4). The provision is sufficient witness to its own necessity.

The Bubonic Plague in the Old Testament

THE most disastrous of all diseases mentioned in the Old Testament was the bubonic plague. It was as fatal as leprosy, highly infectious, and repeatedly swept over the country, leaving hundreds of desolate homes in its wake. It is true that the specific name is not found in the Bible. Indeed, there are several words used for plague or pestilence. But most modern authorities agree that most of the great epidemics described in the Old Testament were actually of that dread character. The outbreaks during the wilderness journeys * (Num. xi, 33; xiv, 37; xvi, 46-49; xxv, 8 f.), that following David's census (II Sam. xxiv), that which annihilated Sennacherib's army (II Ki. xix, 35), and that which devastated the Philistine country (I Sam. v), are all to be regarded as bubonic plague. From the account of David's offering on the threshing floor of Araunah, it would appear that the arrest of the pestilence was sometimes as sudden as its outburst. As cities or crowded camps are usually the greatest sufferers, it was particularly remarkable that the epidemic was stayed at the gates of Jerusalem (II Sam. xxiv, 16).

Fevers and Sunstroke, Gout

PALESTINE has always been the home of various kinds of febrile diseases. The list of disorders in Deut. xxviii, 22, "consumption, and fever, and inflammation, and fiery heat," is probably a collection of popular names of different kinds of fevers, though it is impossible to tell the exact significance of rare medical terms. References to fever, at least as an accompaniment of other diseases, are common. Thus in Ps. xxxviii, which is largely the description of a severe physical ailment, the sufferer cries, "for my loins are filled with burning" (v. 7). Dr. Macalister regards the disease described as confluent smallpox (Hastings, "Bib. Dict.," iii, p. 324 a). Briggs, however, regards the Psalm as a complaint of the afflicted community, and therefore the expression would be figurative (Psalms, Inter. Crit. Com.).

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There are several references in the Bible to a trouble with which we are familiar in summer, sunstroke or heat prostration. Divine protection against this evil is assured in a beautiful poem of the post-exilic period:

"The sun shall not strike thee by day,
Nor the moon by night."

—Ps. cxxi, 6 f.; cf. Is. xlix, 10.*

The moon was regarded as equally dangerous with the sun, though the effects were vastly different. Briggs says that the general use of turbans in the east is a precaution against sunstroke. Jonah, on his vigil to see the fate of Nineveh, fainted when the sun beat down upon his head (iv, 8). Manasses, the husband of Judith, was overseeing the binders in the barley field, when the heat came upon his head so that he had to be carried to his bed, where he soon died (Judith viii, 3). One of the most interesting cases is that of the Shunammite's child, who was seized with pain in the head while playing in the harvest field, always a place of danger, because heat and harvest generally go together (II Ki. iv, 19). This case will receive fuller consideration in my second paper.

There is a disease, mentioned in the Old Testament, which has generally been diagnosed as gout. The statement is that the great King Asa "in the time of his old age was diseased in his feet" (II Ki. xv, 23). The Chronicler adds that "his disease was exceeding great" (II Chr. xvi, 12). The gouty character of the king's malady has been questioned on the ground that the ailment is rarely fatal. But the Bible does not say anywhere that Asa died of this disease in his feet. He may have suffered from gout for a long time, and died from some other senile infirmity.

Mental and Nervous Ailments

FOR our purpose there is naturally a peculiar interest in diseases of a mental or nervous character. Mental disorders are so conspicuous in their manifestation that they could not escape observation; but nervous maladies are so subtle that it is only in

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recent times that their true character has been known, and there is yet a good deal to learn, both in regard to their nature and their treatment. There is, therefore, very little that can be surely diagnosed in the realm of neuropathy, or strictly nervous diseases. But in psychopathy, diseases of more purely mental character, the material is more abundant. The Hebrews understood the physical effects of emotion. The prophet Jeremiah was so disturbed by the alarm of war that he suffered great physical pain (iv, 19). We find the expression "the heart sounds" describing a condition resulting from great emotion (Is. xvi, 11; Jer. xxxi, 20; xlviii, 36). This is explained as a sudden distention of the colon (Hastings, "Bib. Dict.," iii, 325 b); but it would be more natural to suppose that the writers refer to the disturbing palpitation of the heart, which often occurs at times of emotional excitement.

Instances of Fatal Nervous Shock

OF a somewhat different character is the fainting of Jacob's heart, when he was suddenly told that Joseph was still alive (Gen. xlv, 26). This may have been a true syncope, a temporary heart failure. To the same cause we may attribute the fall of the aged Eli, resulting in death from a broken neck (I Sam. iv, 18). Saul's collapse, after hearing the direful forecast of the impending battle with the Philistines, is explained in the Bible as due to his abstinence from food (I Sam. xxviii, 20); but the real cause was syncope induced by the heavy tidings, though his physical weakness may have been a contributing factor. Daniel fainted as the consequence of his visions, and only recovered from the attack after several days (Dan. viii, 27).

The death of Nabal is closely allied with the above so far as cause is concerned. But the circumstances were such that the effect was more serious. This wealthy sheik had spent a large part of the night in a drunken carousal. In the morning, when he was most exhausted from the debauch, Abigail, his wife, told him how near he had been to death at David's hands. As he heard the story "his heart died within him, and he became as a stone" (I Sam.

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xxv, 37), a very graphic description of an apoplectic stroke. He lingered for ten days and then died. Alcimus, the priestly opponent of Judas Maccabeus, was seized with a cerebral paralysis, from which he died. The diagnosis is clear from the statement that "his mouth was stopped, so that he could no more speak anything" (I Macc. ix, 55).

Cases of Melancholia or Insanity

INSANITY appears in several cases. The best-known instance is that of King Saul, the infirmity being attributed to the presence of "an evil spirit from Jehovah" (I Sam. xvi, 14),* and laying thus early the basis for the idea of demoniacal possession so common in the New Testament. Saul may have developed melancholia or a true insanity, but most of his symptoms are paralleled in cases of severe neurasthenia. This case seems to have been marked by indecision, rashness, unaccountable enmity, and there are several signs of a highly nervous temperament, so that the prophetic frenzy was easily inducible.

Another famous case is that of Nebuchadrezzar, who is pictured as eating grass like oxen, feigning animal life (Dan. iv, 33).* There is an interesting case of pretended insanity. David, the refugee in the Philistine country, was in such danger that he simulated madness, "making marks upon the gate and letting his spittle fall upon his beard"—i. e., frothing at the mouth (I Sam. xxi, 13). As he was allowed to go free, it is possible that in Israel, as elsewhere in the ancient world, the lunatic was regarded as a sacred person.

Disorders Resulting from Hypnotism

THERE are some interesting cases which resemble disorders produced by something like hypnotic suggestion. Unless we are insistent for unnecessary miracles, there must be some such explanation of Moses's hand, which became leprous by putting it into his bosom, and was healed by the same process (Ex. iv, 6 f.). Similarly we find a sufficient interpretation of the withering of

Jeroboam's hand. The king stretched out his hand to seize the prophet whose message was so unwelcome, but his hand "dried up, so that he could not draw it back again to him" (I Ki. xiii, 4). Dr. Macalister explains this as "brachial monoplegia," but such manifestations are too common in hypnotic phenomena to require a cerebral disturbance. It is merely the cataleptic state in hypnotism. The most remarkable instance is that of Adam, who fell into a deep sleep, induced by Jehovah, during which one of his ribs was removed (I Gen. ii, 21). Of course this is a legendary story, and the author may have been entirely ignorant of hypnotism; nevertheless it is true that there have been hundreds of severe surgical operations painlessly performed while the patient was in a deep sleep.

We have now traversed the ground of the causes and character of diseases in the Old Testament. The way is thus prepared for a description of their treatment. But the healers and their methods of procedure must be reserved for my second article.

—L. W. Batten.

Editor's Summary

Dr. Batten's article opens the historical section of the subject. In this article, the first on "Healing in the Old Testament," he discusses the various diseases noted in the Old Testament, and cites illustrative cases.

The Old and the New Testament, Dr. Batten points out, show differences in dealing with sickness, due chiefly to the fact that the Old Testament is national in its story, while the New Testament is personal, or biographical.

Dr. Batten proceeds to show that throughout the Old Testament is found the belief that God causes sickness, and that sickness is sent as punishment for sin.

The article provides illustrations of sickness and of the belief in its divine cause from the biblical accounts. Dr. Batten mentions, among others, the death of David's child, the plague of David's time, the plague that came as a punishment for putting the ark in the temple of Dagon, and the destruction of Sennacherib's army by pestilence.

Anxiety as to the outcome of sickness, Dr. Batten tells us, frequently led the people of the Old Testament to call upon prophets for their enlightenment. In illustration of this point, he mentions the stories of the prophecy of Ahijah concerning the death of Jeroboam's child, and the foretelling of death by the prophets Elijah and Elisha.

NOTES AND COMMENT

Among the diseases mentioned in the Old Testament Dr. Batten cites leprosy, the plague, fevers, and mental and nervous diseases. Dr. Batten then gives instances illustrating each of these kinds of sickness, and some of the notions concerning them indicated in the biblical narratives.

Notes and Collateral Reading

[Numbers refer to pages in text]

The Death of David's Child

46. 15. And Nathan departed unto his house. And the Lord struck the child that Uriah's wife bare unto David, and it was very sick.

16. David therefore besought God for the child; and David fasted, and went in, and lay all night upon the earth.

17. And the elders of his house arose, *and went* to him, to raise him up from the earth: but he would not, neither did he eat bread with them.

18. And it came to pass on the seventh day, that the child died. And the servants of David feared to tell him that the child was dead: for they said, Behold, while the child was yet alive, we spake unto him, and he would not hearken unto our voice: how will he then vex himself, if we tell him that the child is dead?

19. But when David saw that his servants whispered, David perceived that the child was dead: therefore David said unto his servants, Is the child dead? And they said, He is dead.

20. Then David arose from the earth, and washed, and anointed *himself*, and changed his apparel, and came into the house of the Lord, and worshipped: then he came to his own house; and when he required, they set bread before him, and he did eat.

21. Then said his servants unto him, What thing *is* this that thou hast done? thou didst fast and weep for the child, *while it was* alive; but when the child was dead, thou didst rise and eat bread.

22. And he said, While the child was yet alive, I fasted and wept: for I said, Who can tell *whether* God will be gracious to me, that the child may live?

23. But now he is dead, wherefore should I fast? can I bring him back again? I shall go to him, but he shall not return to me.

—II Sam. xii.

Moses and the Plague

54. 46. And Moses said unto Aaron, Take a censer, and put fire therein from off the altar, and put on incense, and go quickly unto the congregation, and make an atonement for them: for there is wrath gone out from the Lord; the plague is begun.

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47. And Aaron took as Moses commanded, and ran into the midst of the congregation; and, behold, the plague was begun among the people: and he put on incense, and made an atonement for the people.

48. And he stood between the dead and the living; and the plague was stayed.

49. Now they that died in the plague were fourteen thousand and seven hundred, besides them that died about the matter of Korah.

50. And Aaron returned unto Moses unto the door of the tabernacle of the congregation: and the plague was stayed. —Num. xvi.

Sunstroke

55. 10. They shall not hunger nor thirst; neither shall the heat nor sun smite them: for he that hath mercy on them shall lead them, even by the springs of water shall he guide them. —Isaiah xlix.

Insanity as an "Evil Spirit"

57. 14. But the Spirit of the Lord departed from Saul, and an evil spirit from the Lord troubled him.

15. And Saul's servants said unto him, Behold now, an evil spirit from God troubleth thee.

16. Let our lord now command thy servants, *which are* before thee, to seek out a man, *who is* a cunning player on a harp: and it shall come to pass, when the evil spirit from God is upon thee, that he shall play with his hand, and thou shalt be well.

23. And it came to pass, when the *evil* spirit from God was upon Saul, that David took a harp, and played with his hand: so Saul was refreshed, and was well, and the evil spirit departed from him.

—I Sam. xvi.

The Insanity of Nebuchadnezzar¹

57. 31. While the word *was* in the king's mouth, there fell a voice from heaven, *saying*, O king Nebuchadnezzar, to thee it is spoken; The kingdom is departed from thee.

32. And they shall drive thee from men, and thy dwelling *shall be* with the beasts of the field: they shall make thee to eat grass as oxen, and seven times shall pass over thee, until thou know that the Most High ruleth in the kingdom of men, and giveth it to whomsoever he will.

33. The same hour was the thing fulfilled upon Nebuchadnezzar: and he was driven from men, and did eat grass as oxen, and his body was wet

¹ Nebuchadnezzar of the Revised Version.

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with the dew of heaven, till his hairs were grown like eagles' *feathers*, and his nails like birds' claws.

34. And at the end of the days I Nebuchadnezzar lifted up mine eyes unto heaven, and mine understanding returned unto me, and I blessed the Most High, and I praised and honoured him that liveth for ever, whose dominion *is* an everlasting dominion, and his kingdom *is* from generation to generation:

35. And all the inhabitants of the earth *are* reputed as nothing: and he doeth according to his will in the army of heaven, and *among* the inhabitants of the earth: and none can stay his hand, or say unto him, What doest thou?

36. At the same time my reason returned unto me; and for the glory of my kingdom, mine honour and brightness returned unto me: and my counsellors and my lords sought unto me; and I was established in my kingdom, and excellent majesty was added unto me. —Daniel iv.

The Next Article

EDITOR'S NOTE.—With the following article we take up the more strictly scientific side of psychotherapy. Two of the preceding articles, as we have seen, provided a view of some general preliminary considerations. Dr. Cabot defined the American type of psychotherapy, presented the subject in its bearings with reference to medicine and religion, and pointed out how useful may be the application of psychotherapy to general well-being. Dr. Putnam showed, further, what light philosophy and metaphysics throw upon the problems presented by the sciences of physiology, biology, and psychology in dealing with human life. He emphasized the importance, as a foundation stone of health, of a hopeful notion of the meaning of our existence in the universe. With the following article by Prof. James R. Angell, head of the department of psychology at the University of Chicago, we begin to enter upon the more detailed study of those facts of science which underlie the practice of psychotherapy.

Professor Angell tells briefly how the relationship of mind and body makes possible mental healing, and how this relationship, in fact, *demands* the employment of psychotherapy in the complete treatment of wrong states of body as well as mind. It is the psychologist's explanation of the facts at the bottom of this whole development, which we are studying, in medicine and in educative effort, making for a sane and effective life. Professor Angell further indicates in outline the methods used in psychotherapy which later on in the course will come in for full description and illustration. An understanding of the general conceptions of the interdependence of mind and body here set forth, furthermore, is the stepping stone to the study of the anatomy and physiology of the nervous system, which will follow in succeeding articles in the scientific division of the course.

PSYCHOLOGICAL SECTION
ARTICLE I

Mind and Body¹

Their Relationship in Psychotherapy

By JAMES R. ANGELL

Professor of Psychology, University of Chicago

The Interdependence of Mind and Brain

WHATEVER may have been the fact before birth and whatever the facts after death, the living mind as it is directly known to us is found in connection with a living brain on whose activities the mind is in certain particulars strangely dependent. Conversely, the brain and nervous system as we know them in life are always accompanied with evidences of consciousness. In the higher animals these evidences are striking and conclusive, in the very low organisms less striking and quite ambiguous. But in man the study of physiology, anatomy, and pathology furnishes demonstrations, if common-sense knowledge be judged inadequate, which are entirely conclusive as to the interdependence of mind and brain.* This view is, of course, a commonplace with medical men and natural scientists, but it needs to be emphasized constantly in the face of the present-day movements of a quasi-religious and metaphysical character, according to whose tenets the body is a myth originating from error or sin of some kind. Modern psychology takes its stand with the rest of natural science in denying utterly the slightest justification for views of this kind.

A few words confirmatory of the justice of this position of science may be allowed. We know that if a child is born destitute

¹ See editor's note "The Next Article" on preceding page. * See note at end of article.

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of a given sense process, he can never have any mental experience of the corresponding sensation. In a very fundamental way our knowledge is conditioned by the use of our sense organs and the connected brain areas. Similarly, we know that when we have reached a decision, our mental resolution is likely to be followed by an action of the muscles designed to carry out the decision. The first situation discloses the mind responding to bodily actions; the second reveals bodily acts apparently conditioned upon mental fore-runners.

Common Sense Confirmed by Science

A GAIN we know in the same common-sense fashion that certain drugs and food stuffs affect our minds in quite specific ways. The stimulation of tea and coffee, the soporific effects of opiates will illustrate the point. Conversely, we know that a profound emotion, like grief, will affect our bodily processes in the most serious manner, at times even menacing life itself.*

If we turn to the evidence gathered from the study of mental disease and from the physiology and anatomy of the nervous systems of men and animals, we find the implications of the familiar facts already canvassed confirmed in the most extraordinary and detailed way. In this way we learn, for instance, that our visual mental life is dependent upon certain specific districts of the brain whose destruction will cause obliteration of all our visual mental experiences, whether of memory, imagination, or direct sense perception. Other specific areas control in the same manner our auditory consciousness, and the ability to move definite muscles is likewise conditioned in just this fashion upon the integrity of given portions of the brain and nervous system. From the ravages of disease, from the effects of accident, from experimental observations upon animals, the same correspondence is demonstrated. The convergence of all these lines of evidence upon the same conclusion makes its force overwhelming. No mental process occurs which is not followed by, or accompanied by, a corresponding change in the nervous system; and, conversely, probably no change in the nervous system is wholly ineffective in producing changes in the mind.

Mental Healing (Psychotherapy) Possible

IN view of the statements just made three possibilities are conceivable: (1) The mind may be wholly dependent on the body, and all remedy of disease must originate in the body. (2) The body may be simply the ephemeral physical embodiment of the mind, and all disease may be primarily mental, and therefore all remedial measures may be necessarily directed at the mind. (3) Mind and body may be so related that disease can sometimes be best treated by approach from the mental side and sometimes from the physical side. The third position is the one generally recognized by psychologists and the one to which assent is here given. It is a purely empirical view, expressing no theory of the ultimate relations of the mind and the body, but based on a recognition of the practical facts governing wise procedure at present.

It may be that the possession of a cheerful and optimistic disposition renders material aid in the struggle against bacterial diseases. But the person who should rely upon this disposition to ward off smallpox, when vaccine could be obtained, or who would rely on such a method to save his child smitten with diphtheria when anti-toxin can be secured, would justly be heralded as a fool or a criminal. On the other hand, nothing seems more certain than that at present certain mental disorders which cause untold suffering, however purely fictitious and imaginary they may be, can be got at and alleviated, if not utterly cured, by mental methods of treatment, in combination with hygienic measures of various kinds other than those of a medicinal and surgical character. It is simply a question of fact which of the two general modes of procedure can in a given case be most effectively employed.

Mental Methods Deserve Recognition

IN a certain sense, of course, all medicinal treatment involves some mental element, for the patient is by the very process led to expect beneficial results. Nevertheless the difference in emphasis is genuine, and the two methods deserve separate recognition. At

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lished that the results from its use in many of the more serious disorders are not permanent, and on the whole not altogether beneficial. On the other hand, certain physicians use it freely and with alleged success. Most medical men who employ it either do so only when other devices have failed, or when it can be used once or twice and then dropped, as in the production of tolerance for anesthetics prior to some serious operation.

On the whole, psychologists sympathize with this conservative attitude toward the use of hypnotism, for although its occasional use is not likely to have the serious effects dreaded by the popular mind in a "weakening of the will" in any general way, it may produce an undesirable dependence upon the hypnotizer. Moreover, we know so little as to what really goes on in the brain during the hypnotic sleep, and the results of it are in many ways so peculiar, that common sense would command a sparing participation in it unless other devices better understood had failed.*

The Method of Suggestion

THE legitimate offspring of hypnotism is suggestion. Suggestion is a term of the vaguest connotation covering anything from a direct command to a casual hint. When used in connection with medical affairs, it is generally understood to mean the subtle instillation, by remark and by general conduct, of ideas of health and vigor, and particularly of the removal of whatever symptom has been disturbing the patient. In the broad sense of the term every physician necessarily uses suggestion. And it does not seem unfair to say that the marked success of many medical men quite lacking in accurate scientific medical learning has been gained by the use, unconscious perhaps, of just this power to suggest. When the method is used consciously, it involves a definite familiarity with the principles of nervous diagnosis and the possession of a definite programme for securing the full confidence of the patient and his gradual assent to the reasonableness of his recovery.*

In one of the forms in which the method is now most fully

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developed, the main emphasis falls on such a gaining of the confidence of the patient as will enable him to lay entirely bare to the physician the whole gamut of his anxieties and symptoms. When this cannot be done by the patient, either by reason of distrust or because his knowledge of the facts is inadequate, other devices are hit upon to betray him into such a confession. This is not done with intent to deceive him, but simply to help him. Some of the disturbing facts may be "subconscious," as it is called. Certain German investigators have invented methods by which this "subconscious" stratum can be tapped. In the hands of different physicians these methods are very differently successful. The general principle underlying them all is to get a frank, honest facing of the whole situation by the patient in conjunction with his physician, who then is in a position to tell the patient truthfully what must be done to make progress. This something may be living in utter quiet for a time; it may be going out into the country; it may even be going about his business again at once. But in any case the patient is made to face the facts with knowledge and hope instead of ignorance and fear. In this form the method just described is sometimes called the method of reëducation. It may at any time be supplemented with hygienic means of various sorts, baths, exercises, etc.

Religion in Mental Healing

IT must be clear that if we can make any approach to restoration from diseased conditions by mental means, we shall be the more successful the more powerfully we can appeal to the mind and the emotions. Now, among all the feelings to which we can appeal, few, if any, are so strong as those which we call religious.* This fact is borne out by religious healing. No religion is without such phenomena, and in many of them such facts are brought forward as proof positive of the truth and divinity of the faith. Christianity is no exception to this rule, although Protestant Christianity until very recently has increasingly disregarded the possibilities here at hand. From the hygienic side, therefore, there is a tremendous

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advantage is to be gained from the religious appeal, wherever it can be used.

Furthermore, it is to be recognized that many people will go to a clergyman with troubles which are in essence mental that they would not think of consulting a physician about, because it would not occur to them that they were really ill. These cases represent no small part of the keenest suffering in which the human kind is susceptible. It is fortunate if the religious adviser be a man wise enough to handle these cases as they should be handled—i. e., as pathological and mental rather than primarily moral. Of course, there is often a moral obliquity at the bottom of the matter, but, after all, the point here is simply that many cases sadly needing treatment and likely to get to a physician after it is too late wholly to repair the damage, may be kept from the brink of serious mental trouble if the clergy is alive to its opportunities and responsibilities.*

Dangers of Mental Healing

THE obvious opportunity which mental healing offers to the quack requires no comment. But the quack has not been wholly eliminated from the practice of medicine under any of the more commonly recognized forms. Probably so long as human credulity and cupidity continue to influence men, the quack will still flourish. At all events, the danger from him seems inadequate reason for throwing upon a method indispensable for the treatment of certain forms of human suffering. It is painful to say, what I believe to be the fact, that we owe to the unwise attitude of the medical fraternity toward mental therapeutics the astounding spread in our day of Christian Science and all its many imitations and forerunners. Not that these movements have been wholly bad or wholly false in what they have taught. The century is to no small extent the wiser. But the grave errors into which they have fallen and the ascendancy which they have gained over many minds might have been largely spared had the attitude of physicians been different.

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Caution Necessary

THE proper use of mental therapeutics requires not less, but, in my judgment, more care and diagnostic skill than is called for in ordinary diseases of the body. There is needed the deepest knowledge, both therapeutical and practical, of the psychology of the human mind, and the most penetrating insight into human character. Moreover, the progressive treatment of such persons calls for a trained skill compared with which ordinary prescribing is child's play. The great danger of the movement toward mental healing at the hands of nonmedical men is that of getting away from constant contact with the neurologist, who can detect the danger symptoms which the untrained man cannot. Not only should such movements as those which have originated in Chicago and Boston be carried forward with the help of medical experts who will examine the patients at the outset; the expert should also be held in close touch with the cases throughout the course of the treatment in order that no harm may be needlessly done the patient and that the movement itself may not fall into disrepute, as other mental healing movements have done. Ignorance is fatally expensive.

—James R. Angell.

Editor's Summary

This article offers a reply to the question, What has science to say of the relationship of body and mind that makes psychotherapy, mental healing, possible and effective?

The answer is furnished by psychology, the science of mind. Psychology finds from the evidence of every-day life, from the effects of drugs and foods upon the mind, and the effects of mental states upon the body, from observations in disease, and from experiments upon animals, that mind and brain are interdependent. The one acts upon the other.

It follows that disease, or wrong states of body or of mind, can be treated either from the physical or the mental side. Psychotherapy working through the mind, therefore, deserves recognition as well as medicinal treatment directed primarily at the body.

Professor Angell's article gives also a brief outline of the principal methods of psychotherapy. These are: hypnotism—which should be used only when other methods fail, and then under proper restrictions; sug-

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gestion—that is, the “subtle instillation by remark and by general conduct of ideas of health and vigor”; and, most important of all, reëducation, in which the patient’s confidence is gained and his reason is appealed to by explanation and persuasion.

The religious appeal is important in psychotherapy because it affords an opportunity to act powerfully upon the mental side of the personality through the emotions.

Knowledge of the human mind and of character is needed to apply psychotherapy effectively and safely.

Notes and Collateral Reading

[Numbers refer to pages in text]

Early Beliefs as to Mind and Brain

62. In ancient times the seat of the mind was held to be in the blood, in the diaphragm, or in the heart. Among the ancient Greeks, only Alcmaeon and Plato taught that we think with the head. Herophilus, the great Alexandrian anatomist (300 B.C.), was the first to transfer the mind to the brain, relying on definite facts—that is to say, on the observation that the nerves, and especially the sensory nerves, are collected in the brain as the last center. But this anatomical proof is not enough to establish the conviction of the real connection between consciousness and brain. However, a series of comparative observations and experiments has here been decisive.

—H. Höffding, “*Outlines of Psychology*,” 1892, p. 53.

Emotions and Bodily Processes

63. It is unnecessary to multiply instances showing the influence of the mental states over bodily functions, as everyone must have numberless examples of it in his own person. Mental discouragement and depression have as their accompaniments disinclination for exertion, and very frequently a sense of bodily fatigue. Who has not felt such a combination of symptoms after disappointment and worry, and does not know that the removal of the cause is followed by immediate removal of the effect? A letter saying that the friend we mourned as about to die has recovered, or that the investment we thought hopelessly bad has turned out a brilliant success, not only removes the mental symptoms, but also seems to put new energy into our actions. The sense of fatigue vanishes, the muscles become braced up, and there is an immediate demand for an outlet of energy which has been liberated by the removal of the inhibitory effects of despair.

The counterpart is equally apparent, for we know and have experienced the effect on the depressed and wearied mind of a game of tennis

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or billiards, or any form of effort which acts as a derivative by calling off nervous energy from overworked and enfeebled centers into other channels and fresh combinations. The philosopher is indifferent to privation and suffering because he is able to direct his thoughts into channels which are not affected by the ups and downs of ordinary life, and his philosophy is practically the outcome of the development of his power of inhibition.

—C. Lloyd Tuckey, M.D., "*Treatment by Hypnotism and Suggestion, or Psychotherapeutics*," 1900, p. 32.

Mental and Physical Methods

65. By way of advice to the physician, Dr. Paul Dubois ("*Psychic Treatment of Nervous Disorders*," 1908, p. 92) comments on the two lines of attack upon the nervous system, either through the body or directly through the mind, as follows:

The physician often has to choose, in a few minutes, at the patient's bedside, between these measures: physical treatment or medicaments which can only affect the mentality through the medium of the body, and pure psychotherapy which, in acting psychically, is no less efficacious.

And we must never forget that in the two cases there is a mental change and a cerebral change.

It is by the influence of the physical on the moral that your intoxicated patient is rebellious, impatient, and vicious. You can bring him back to reason by treating his body only, but you can employ the action of the moral over the physical and reach the same result—namely, a favorable change of the pathological mentality.

Charcot

65. Jean Martin Charcot was a famous French physician. He was born at Paris, November 29, 1825, and died August 16, 1893. Charcot became noted for his lectures on nervous diseases, especially on hysteria and hypnotism, at the Salpêtrière, the great Paris institution for the care of old women. In 1873 he was appointed professor of pathological anatomy at the University of Paris, and in 1882 Professor of the Clinic of Nervous Diseases. Charcot did much to advance the knowledge of the diagnosis of nervous diseases, particularly in connection with hysteria. His name is associated with some of the earlier scientific attempts to explain the phenomena of hypnotism. Among his writings is "*Leçons sur les maladies du système nerveux faits à la Salpêtrière*."

Dangers of Hypnotism

66. The dangers of hypnosis have been exaggerated by some and underestimated by others. We know now pretty well what they are, and

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methods for avoiding them have been and are being worked out. In this connection the process of desuggestion, as advocated by Bernheim, seems to be very important. Certainly no one except a medical man or a trained psychologist should use hypnosis; needless to say, a third person should always be present.

—Llewellys F. Barker, M.D., *Journal of the American Medical Association*, August 1, 1908.

The Method of Suggestion

66. The Law of Suggestion, which is one of the great discoveries of modern science, was first formulated by Dr. Liébeault, at Paris, in a book published in 1866. Since his day the number of physicians who practice "suggestive therapeutics" has steadily increased, until to-day no thorough clinical hospital is without a professional suggestionist. This practice does not involve any metaphysical theories, the passage of any hidden force from one brain to another, any "planes of existence," or any religious upset, or any poetic physiology, or the swallowing of any occult doctrines whatever. It is one of the simplest and coolest of scientific theories. It is a question of the relation between the brain and the bodily organs. It seems never to have been clearly stated that healing disease by suggestion depends not in the least degree upon any theory of the relation of mind and matter.

—Dr. Max Eastman, "The New Art of Healing," *Atlantic Monthly*, May, 1908.

Religious Emotions and the Physician

67. The physician is destined to become more and more intimately concerned with the attitude of mind which we term religion. If it be true, as we are told by Freud and the psychoanalysts in general, that primary emotions must be discovered if the physician is to do his completest work, it is evident that the emotion of religion not only cannot be overlooked, but may indeed constitute a most essential object of study. If confession is good for the soul, the physician hereafter must certainly, as never before, assume the rôle of a lay confessor.

—E. W. Taylor, M.D. *Address*, Boston, November 23, 1907, before N. Y. Neurological Society, Philadelphia Neurological Society, and Boston Society for Psychiatry and Neurology.

Relation of Minister and Doctor

68. A word about the relations of the minister and the doctor concerning sickness in general. It may be regarded as necessary by some, perhaps

by many physicians, in rare instances, for a brief period during some critical stage of an illness to exclude the minister and even the family from the bedside of the patient. But the majority of physicians under all circumstances welcome the presence of the clergyman. Among Catholics, the priest is sent for frequently before the doctor, and the two are always on the best of terms. The doctor is glad of some one to whom he can give an exact and more or less technical account of the condition of the patient, and who will impart any unfavorable news in the wisest way. And if the patient is *en rapport* with his pastor, has been helped and uplifted by him, he will desire at this particular time to see him expecting some aid and comfort which will be of restorative value to him. This the intelligent physician will welcome as he does the tonic influence of a cheery and tactful nurse.

—Frederick T. Simpson, M.D., *Lectures at Hartford Theological Seminary, 1907-8.*

The Next Article

EDITOR'S NOTE.—It is one of the fascinating things about the study of psychotherapy that it touches upon that shadowy realm where science seeks the solution of the riddle of life. It is impossible to understand the operation of mental healing without securing at the start some elementary knowledge of the structure with which science associates consciousness or thought—the nervous system. It is in their investigation of this marvelous complex of delicate fibers that physiologists believe they have put their finger upon the key to the mystery. Dr. Simpson's article outlines some of the more general notions held by the medical profession about this system, nerves and brain. The scope of his paper makes it impossible to deal in detail with this topic. In his description is combined a sketch not only of the anatomy—that is, as need not be explained, the description of the parts of the nervous system—but also of its physiology, the description of its functions or activity.

Both the anatomy and the physiology of nerves and brain will be taken up in greater detail in special articles later on in the course. We may suggest here that Dr. Simpson's article presumes some degree of acquaintance with the elementary facts of human anatomy and physiology, and that it may be advisable for the reader whose notions on this subject have been dimmed since his school days to turn again to some of the school physiologies for a general description of the nervous system. Treatment of a subject so intricate and involving the setting forth of some of the most advanced ideas of modern physiological science would have made impracticable in the space at our command the reproduction of a statement of these more primitive facts.

PHYSIOLOGICAL SECTION
ARTICLE I

The Nervous System¹

By FREDERICK T. SIMPSON, M.D.

Visiting Physician to the Hartford Hospital

Nervous System Acts between the Mind and the World

WHAT is the relation of the mind to the body? How can an idea cause palpitation of the heart, blushing of the face, universal outpouring of perspiration? Through what mechanism does an emotion cause blanching of the hair, a fit of indigestion, or an attack of jaundice? * The medical student is required first to have some idea of the physiology of a system before he learns anything about its pathology. I shall here present in outline, therefore, the medical conceptions of the structure and functions of the nervous system, which is the intermediary between mind and body and between mind and the outside world. I shall refer as briefly as may be to Waldeyer's² conception of neuron, to Hughlings Jackson's³ idea of evolutionary levels, and to some of the facts of localization of spinal and cerebral functions with the object of showing the anatomical and physiological basis for the orderly control of mind over bodily functions, as well as the disorderly conditions observed in the psychoneuroses.⁴

The Neuron or Nerve Cell

THE nerve cell, whether taken from the brain, the spinal cord, or the ganglia of the great sympathetic system which ramifies through the internal organs of the body, has always an identical

¹ See editor's note "The Next Article" on preceding page.

² Buxton, "The Nervous System," Chapter V.

³ *Lancet*, 1895.

⁴ Functional disturbances of the nervous system.

* See note at end of article.

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structure.* Within the nerve cell is not only the nucleus with its nucleolus, but also a large number of granular bodies more or less regularly arranged in the protoplasm about the nucleus. These bodies take up readily certain stains or aniline dyes, and so have been termed chromophile bodies. Through the inventive genius of Golgi of Italy and Cajal of Spain, in originating new methods of staining nerve structures, it was discovered that from each cell there was an enormous bushy outgrowth of protoplasmic processes or fibers, which were called dendrites. These outgrowths are a hundred, yes, many hundred times larger in total bulk than the cell itself. The cell itself is no longer the all-important part, but becomes rather a storehouse of nutriment and nerve energy. Each cell with its bushy outgrowth is an independent, self-sustaining unit to which Waldeyer gave the name of neuron. There is apparently no connection by continuity of substance with other cells. Communication comes only by way of contact. The outgrowing fibers or processes always terminate in a brushlike expansion which surrounds other cell bodies or their processes, but never grows into them.*

Brain as a Democracy

FROM this generally accepted structure of the neuron has come a theory from Dercum, of America, and others in Europe, based upon certain observations of nerve cells in one of the lower forms of life, which, if true, would explain the phenomena of sleep, of conscious brain activity, of such symptoms as fainting, hysterical paralysis, and many other psycho-pathological phenomena. This theory supposes what has actually been seen—namely, an infinitesimally small movement of retraction or expansion of these protoplasmic processes or dendrites. In normal brain activity these processes are in contact. In fainting the retraction or break of contact is universal and sudden throughout the cortex, in sleep more or less universal and gradual. In hysterical paralysis of vision or of a limb, a group of neurons which normally functionate together are in a condition of persistent retraction and separation from the rest

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of the brain. The expansions of these processes produce normal brain activity, or the restoration of lost functions.

Now, I do not lay any great stress on this theory, which has as yet gained no very general acceptance among the profession, but I do present to the reader this new conception of brain structure as a democracy, as an aggregation of independent neurons, in which cells are less important than fibers, and which tends to make the nervous system more of an intermediary, an intercalary between bodily organs, between mind and body, and between mind and world, and the emphasis is to be placed upon the independence of the neurons and the possibility of their separation or dissociation singly or in groups, causing functional amnesia.

Evolutionary Levels of Nerve Structure

NEXT, as to so-called higher and lower centers, and the Jacksonian * doctrine of evolutionary levels in brain structure and function. Let us consider a series of frogs vivisected. In the first, everything is cut away except a segment including the hind legs and the lower part of the spinal cord—in other words, we are dealing with the lower half of the frog. If, now, the skin of the flank be stimulated by acid the nearest foot rapidly rubs it off. If this foot be held, after a pause the other foot is used for the same purpose. In the second frog a segment including the forearms is cut out. Under the appropriate stimulus the arms will actively grasp and cling to any object placed between them.

In the third, fourth, and fifth frogs, let the body of the frog be retained, but the cerebrospinal system be divided at successively higher levels in its upper part. We now find successively added, the power to breathe, to swallow, to jump, to swim, to croak, to see, and avoid objects. If everything is left except the hemispheres, which represent the principal part of the mass of the brain in man, but which are relatively small in a frog, he will snap at a fly crawling over his nose, bury himself in the sand, and in the breeding season distinguish females from males. Two things distinguish him from the normal frog. First, spontaneously he does nothing,

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most expansion of the cord known as the medulla oblongata exist centers regulating the movements of the heart, of the stomach, of respiration, of the entire arterial and capillary system. Here is a center, for instance, which wounded will produce universal sweating. Still ascending, we find centers controlling the mechanism of phonation, of articulation, of deglutition, and in certain ganglionic masses just above the medulla are the primary centers of sight and hearing, taste and smell.

Influence of Conscious Mind on Lower Centers

NORMALLY these centers act automatically, subconsciously, if you please, but being in marvelous correspondences with each other, the respiratory center, for example, adjusting its activities to the needs of the cardiac when a person is running or undergoing any form of increased activity. On the other hand, any one of these centers is liable to be thrown out of order by influences coming down from above, as seen most conspicuously in the psychoneurosis of hysteria. Thus we have hysterical pregnancy, phantom tumors of the abdomen, hysterical cough, hiccough, vomiting, loss of voice, hysterical paralysis of all sorts and hysterical blindness and deafness, and many other symptoms.

Brain Architecture

FORTY years ago practically nothing was known or could be imagined of the function of the brain itself—the hemispheres which make up its chief bulk. It was a terra incognita—a mass of puttylike matter weighing about three pounds, two thirds of it grayish in color and made up apparently of cells or having cells scattered through it in layers, and one third of it white and made up of fibers, the course and connections of which no one was able to find out. Now, owing to knowledge gained largely by vivisection and in a lesser degree by ante- and post-mortem study of rare cases of isolated localized brain lesions, the main lines of the architecture of the brain stand out clear, and the functions of its various lobes

constitutes nearly one half of the mass of the brain, is peculiar to man. It is the general consensus of opinion of medical authorities that the forebrain subserves the highest processes of mental activity, reasoning, judgment, attention, self-control. The center of the more complex conscious states is probably in the frontal lobes. I do not mean to limit consciousness to the brain cortex, or even the nervous system.* The participation of the whole body is generally admitted in those states of consciousness called feeling and will which constitute the larger part of our conscious life.

Dearborn¹ calls the brain chiefly an organ of cognition, and makes consciousness a property of all protoplasm. Herbert Spencer defines the ego dynamically as the energy pervading the entire organism in all its parts, including the brain, which energy he further calls a portion of the "Unknowable Power." But so far as there is a primary center, focus, or principle of conscious volition, of conscious feeling, and of conscious thought, it would seem to be located in this level of evolution of the nervous system.

The Blood and Nervous States

THERE is yet another important pathway of communication between the brain and the bodily organs which I can only touch upon, and that is the circulation of the blood. Disturbances of blood pressure seem to be present in many neurotic conditions. That many varieties of accidental and insidious poisons, such as lead, alcohol, ptomaines, etc., entering the blood through the stomach or the lungs may produce mental disturbances varying from simple nervousness to mild states of delirium, hallucinations, or states of stupor is known to all. But the facts of autointoxications in the production of nervous states are probably not so well known. That an excessive secretion of the thyroid gland will produce a simple or profound neurasthenia, that the results of abnormal activities of ovaries, adrenals, pituitary body, and other glandular structures are conveyed to the brain through the blood and modify mental operations and the conscious feelings of well-being are only

¹*Journal of Nervous and Mental Diseases.*

THE NERVOUS SYSTEM

recently known and but little understood by the medical profession. What rôle toxic chemical substances produced by imperfections in the processes of digestion, metabolism, and excretion and floating in the blood throughout the system play in inducing neurasthenoid conditions remains to be proved, but this conception has had a very strong hold upon the minds of the medical profession in recent years.

The Reason for Psychotherapy

IN the psychoneuroses there are always present in greater or less degree disorders of the highest faculties of the personality, modifications of consciousness, weakness of judgment, impairment of self-control, obsessions and fixed ideas of all sorts, anxieties, fears, morbid impulses, and a perversion of the highest ethical and social feelings. With these are mixed up a host of physical symptoms. It is the belief of the advocates of psychotherapy that the causation of these disorders lies primarily in the realm of mind, whether conscious or unconscious.

This view is a relatively new one, and whether it is true or not the future will decide. For eventually, like every other form of treatment in these days of scientific medicine, it will be subjected to the rigid test of statistics, and take its place according to that. The new view, however, is meeting with wide acceptance, and a great gain that I foresee will be the attempt to more accurately determine as to the physical or mental origin of any set of symptoms. The new view has this advantage, that it is optimistic, and is calculated to bring about energetic and coöperative action to combat these conditions.

—*Frederick T. Simpson.*

Editor's Summary

Following Professor Angell's account of mind and body and their wonderful interrelations, Dr. Simpson sets forth the main conceptions of science concerning the mechanism which serves as the actual physical connection between mind and body.

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This Mechanism is the Nervous System. Dr. Simpson discusses (1) the conception of the "neuron," (2) the conception of "evolutionary levels" in the nervous system, and (3) the localization of special functions in the brain and spinal cord.

1. *The "Neuron."*—This is the name of the single nerve cell, out of which the whole nervous system is built up. These minute cells, having bushy outgrowths called "dendrites," massed together in nerve fibers and brain tissue, are believed to communicate with each other only through their branches. Proper contact of these little receptors constitutes nerve health; a lack of proper contact, nervous disorder. The brain or nervous system is thought of as a orderly democracy, and the separation of various groups in this collection of neurons, or nerve cells, may therefore interrupt and disharmonize the otherwise harmonious and healthy life of the mind.

2. *The Theory of Evolutionary Levels.*—According to this idea, Dr. Simpson tells us, the various centers of the nervous system which make responses to the outside world belong to three groups, located in different portions of the nervous system, as follows:

(a) *The Centers of the Lowest Level* make automatic replies to stimulation from the outside and work usually without our conscious knowledge. They are located in the spinal cord and in certain "ganglia," knots of nerve tissue, all situated below the hemispheres of the brain. They control or regulate the various bodily unconscious or semiconscious functions, such as the action of the heart, of the stomach, of breathing, swallowing, and the like. They are also concerned in the common sensations, such as touch, heat, cold, pain, etc.

(b) *The Midlevel Centers.*—These Dr. Simpson describes as having a certain degree of consciousness and intelligence. They act to give effect to the orders given by the conscious mind to the body, coördinating and making harmonious the action of the various muscles or organs in carrying out our purposes, as in talking or writing. They arrange and combine and make intelligible the perceptions of the senses, and store up impressions as memory. These centers, however, are without power to do anything of their own accord, to will, or exercise judgment or self-control. They constitute a sort of secondary consciousness. When cut off from the primary consciousness—from those highest levels of the brain, which reason and will and judge—this secondary consciousness shows itself in what is known as "double personality" and similar states. These centers are located in a system of white fibers within the brain, lying chiefly about what is known as the primary fissure of the brain.

(c) *The Centers of the Highest Level.*—These are thought of by physiologists, Dr. Simpson tells us, as the organs associated with the highest forms of mental activity, such as reasoning, judgment, attention, self-control, and all the more complex conscious states. Here is "the focus, or principle of conscious volition, of conscious feeling, and of conscious thought." These centers are located in the forebrain, known also as the cerebrum, or the cerebral lobes.

NOTES AND COMMENT

3. The localization of brain centers is indicated by Dr. Simpson in connection with the description of the activities of the midlevel and higher centers.

Notes and Collateral Reading

[Numbers refer to pages in text]

Blanching of Hair, etc., from Emotion

74. Dr. Charles Mercier, in his recent work, "Sanity and Insanity," refers to the rapid pigmentary change, both as regards the hair and the skin, produced by excitement and emotion, and gives as an instance the case of a young Bengalee with perfectly black hair who was arrested on a grave charge and publicly examined. The danger and horror of the situation so affected him that his hair actually changed color before the eyes of the spectators, and in the space of half an hour was of a uniform gray tint. That emotion and fancy have power to modify the secretions is shown by the well-known fact that the mouth becomes dry and parched through fear or anger, while, on the other hand, it "waters" at the idea of savory food, the mental impression paralyzing or stimulating the secretory apparatus of the salivary glands. Violent emotion, again, will so modify the secretion of gastric juice as to cause indigestion in subjects at all predisposed to it. An attack of jaundice may be induced by anger—as the popular saying, "green with rage" implies—from accumulation of bile in the blood through nervous excitement, causing "inhibition" of the healthy function of the liver.

—C. Lloyd Tuckey, M.D., "Treatment by Hypnotism and Suggestion, or Psychotherapeutics," 1900, p. 25.

Parts of Nervous System

75. The nervous system as a whole is divided into: (1) The central nervous system, (2) the nerves passing from it to different parts of the body, (3) the sympathetic system and its isolated ganglia in different parts of the body, and (4) the nervous apparatus of the end organs (eyes, ears, etc.). The central nervous system is further divided into the brain and spinal cord. The brain is further divided into the cerebrum, cerebellum, medulla oblongata, and other parts.

—E. L. Thorndike, "The Elements of Psychology."

Communication between Neurons

75. The nervous system, instead of being one continuous tissue, is made up of a series of distinct and separate cells, whose only means of com-

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munication is by "touching fingers" with the tips of their delicate, twig-like processes (arborizations, dendrites), and these "fingers" have the power of movement, can retract, and thus break the connection or circuit. When the cells of the brain become fatigued, they are supposed to draw in these processes.

—Woods Hutchinson, M.D., "*The Curiosities of Sleep*," in *American Magazine*, October, 1908.

Hughlings Jackson

76. John Hughlings Jackson, M.D., LL.D., is Consulting Physician at the London Hospital and Physician to the Hospital for Epilepsy and Paralysis.

Parallelism of Nervous System and Consciousness

82. The great importance of the nervous system lies in its serving as the connecting central organ of the several parts of the organism, guiding their activities into inner harmony, and enabling them to present a combined front to the external world. Exactly the same task is fulfilled by consciousness in its own way. In it things scattered in space and time are brought together, the wave beats of the conditions of life are expressed as a rhythm of pleasure and pain, and in memory and intellectual activity is manifested the closest concentration to be found in the whole of our experience.

—H. Höffding, "*Outlines of Psychology*," 1892, p. 50.

The Next Article

EDITOR'S NOTE.—The development of psychotherapeutic treatment in connection with the Emmanuel movement has been such a striking fact in the recent history of psychotherapy that it naturally has a strong claim to attention. It will be one of the functions of this course of reading to present from time to time reports of the work of clergymen in this field. It will be possible in this way to give an account of the progress of this movement, and to place its results on record for examination and judgment. Among the offshoots of the work undertaken by the Emmanuel Church, Boston, the "clinic" conducted by the Rev. Lyman P. Powell at St. John's Church, Northampton, Mass., is noteworthy. In the following article Mr. Powell tells of his methods, and presents results as he has found them. As it is our purpose to permit in this course the unrestricted presentation of individual points of view, we expect to apply this method equally to the religious side of the subject as to its more scientific phases.

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every Tuesday alone from 3 to 6 P.M. Those coming to consult me, ranging every day from three to seventeen, were made to feel at home in the reception room by a mature and cheerful Christian woman. Each visitor in turn was passed from the reception room into the study, where the very atmosphere invites to trust and confidence, and with scarcely an exception at once explained without reserve the occasion of the visit. In more than one hundred cases of the two hundred that have come to me the friendly talk that followed, supplemented now and then by some wholesome book, cleared the mind of all its worry, and calmed the troubled spirit without further treatment. When there was reason to suspect that the nervous system was in any way involved, I required before the beginning of the treatment a doctor's testimony that there was no organic trouble.

Applying the Emmanuel Method

WITH the way thus clear, the patient is subjected to a searching inquiry into every circumstance touching in any respect upon the mental or the physical condition. The failure to reply with perfect frankness invariably closes the discussion and makes treatment utterly impossible. Nothing is spared to secure the patient's confidence, and to establish the closest spiritual relationship. Directions are given in regard to mental and spiritual hygiene, and a course of reading is mapped out, sometimes covering a period of weeks. In a few instances the frank discussion and the daily reading of the books suggested have been the largest factors in the patient's forward march to health.

Usually, however, after the discussion and the prescription of good books, the patient is seated in the comfortable Morris chair before the fire, which I take care by this time to have burning low, is taught by rhythmic breathing and by visual imagery to relax the muscles, and is led into the silence of the quiet mind by tranquilizing suggestions. Then in terms of the spirit the power of the mind over the body is impressed upon the patient's consciousness, and soothing suggestions are given for the relief of the specific ills.

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when possible, in providing for the convalescent steady occupation of some congenial sort for mind and body.

The most significant results of the Emmanuel treatment are psychical, and therefore not to be described by statistics. They are written in the heart. They shine forth from the face. To some, even though still suffering from ills of the body, and included, therefore, in the list of the "slightly improved," the new uplift of the soul, the new serenity of mind, seems to make the body's ills practically negligible. "I have ceased to have an interest in them," one suffering patient said to me who in her darkness sees the light.

Helpfulness of Physicians

THE relationship of the Emmanuel worker and the doctor in a city small enough for everybody to have first-hand knowledge of his neighbor and his neighbor's business is of prime importance. The work can be, in fact, at every point embarrassed unless the doctor gives a glad consent and constant help. Northampton doctors from the first have shown a friendly spirit toward the clinic here. If any have regarded it purely from the point of view of their own prestige and preferment, no word has come to me. But I have had frequent evidences of their generous and scientific interest in the entire movement, and have had their counsel and assistance all along the way.

As in Boston so here, a doctor's diagnosis * has been required in every case, and at my own request the doctors have made the usual charge for it. In certain cases from a distance as well as from Northampton where functional nervous disorders were accompanied by organic and other troubles I have claimed and received their coöperation, and have insisted, as in diagnosis, that they make their usual charge for every service rendered. Though they have never known it, I have on several occasions saved them patients who have grown discontented, and in certain instances have strengthened them in the family confidence. They in turn have sent me some cases which had baffled medicine only to find at last more or less relief

ment, and she is already much improved. The asthmatic attacks no longer come by day, and are usually less severe at night. Her distress and hopelessness have given way to calm and cheerfulness, and her general condition is in every way better.

An Apparently Hopeless Case

CASE 3.—A woman, seventy-six years of age, has been suffering for at least six years from what the doctor is convinced is some internal malignant growth. Though an exploratory incision was forbidden by her age and her weak heart, the extreme pain from which she was seldom free and another characteristic symptom have made the diagnosis credible. For the last year or two she has been confined practically all the time to her home, and has been able to make her communion only once at the church.

From the first day of my clinic she was set upon receiving treatment. My frequent protest that the Emmanuel movement has no message for such cases was met with a resurgence of such faith as is seldom seen outside of Christian Science. The doctor thought the treatment might serve at least to brighten her and give her strength to bear her lancinating pain. With no other pledge to her than this, I began on January 10th to give her treatment. To my amazement, not merely did the pain immediately disappear, but also for a time the other characteristic symptom. Her sleep, fitful and broken, became and has continued regular and profound. There was such an immediate improvement in her general health as made it possible for her for the first time in a year or two to drop in at the neighbors and to go out in the automobile.

Pain and Sleeplessness Banned

THOUGH the treatment, which has been invariably given in her home, was unavoidably interrupted for some months, during which all the symptoms except sleeplessness returned, it was in July resumed, has since been given frequently, and has never, except once, failed to afford complete relief from pain within ten minutes.

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While I have as yet no inference to draw from this experience except that suggestion reënforced by faith has proved to this Christian saint an unfailing specific for extreme pain and sleeplessness, she bids me say to those who read these words that she has beside a new faith, a new joy, and a new peace which lift her above all her former consciousness of pain. The experience means the more to her because the tendency of morphia to depress her mind and rob her of her sleep obliged her to suspend its use, and made her formerly defenseless in the face of pain.

Perils and Temptations

THE clinic has its perils and temptations. They need to be admitted in advance if they are to be shunned. Though not one of the two hundred who have come to me has asked for financial help, a few with the best intentions in the world have shown a disposition to claim more time than either their case required or was in justice to my other patients right for me to give. Unless the Emmanuel worker who would have his clinic keep its proper place among his parish agencies is ruthless, however gentle he may be, in apportioning his time, he may become the victim of every psychological parasite in the community, and lose his power to help them as well as everybody else. In one instance in which I felt obliged to make this clear to one poor psychasthenic a flood of tears broke forth, but when she at last understood that the Emmanuel worker's purpose is not so much to help people as to inspire them and instruct them how to help themselves she proceeded to get better, and is still improving.

Sooner or later Mrs. Potiphar is sure to follow Mrs. Gummidge to some spiritual clinic, as she, alas, too often follows her into the office of the doctor. But if, like Joseph, the Emmanuel worker leaves nothing more than his reputation in her designing hands, no lasting harm can come to him or to the cause.

To Help Men to be Strong

THE editor of *The Churchman* has recently remarked that "Francis of Assisi and John Wesley stand out as saviors of the church because they refused to allow parochialism to obstruct their work for Christ." The Emmanuel movement is a protest and a pledge; a protest against the substitution of perfunctory parochialism for the better things the Church has to offer. Men expect more of the Church than that it shall take its place among the various agencies for the general betterment of men in the mass, some of which are more efficient than the Church can in the circumstances be. However they may voice their longing, men want the Church to help them to be strong and holy and serene. They yearn instinctively, even when they know it not, for John Wesley's "New Birth" of wholesomeness and joy and peace. And now they know—for some have already found it true—that this new inner life, this mind that was in Jesus Christ, brings better health to the whole personality, and enables it to function far more profitably to the entire social body.

A Protest and a Pledge

THE Emmanuel movement in this age of multiplying cults is, perhaps, the first serious protest within the Christian Church against contentment with less than the best the Church can give the human soul. But it is more than a protest; it is also a pledge of that glad day when no one will want, as now, to go outside the Church to find that "kingdom of the psychic nature of man," which seems everywhere to-day to be the quest of souls that hunger and thirst after righteousness and peace.

Ministers with temperamental qualifications who, after careful preparation, add the clinic to their other parish agencies, will find in it for themselves a new wellspring of health, delight, and inspiration. Parish visiting will lose its merely social character. The lonely, the discouraged, and the neurasthenic will look forward to the frequent visit of the pastor as that of one who can do for them

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Before entering upon the Emmanuel work, the clergyman in this instance had a certain amount of familiarity with the subject of psychotherapy.

Mr. Powell's work, he tells us, was conducted with regular consultation hours, either once or twice a week. He administered the treatment under conditions inspiring confidence and restfulness. Diagnosis by a physician was required, and a thorough inquiry was made into all the conditions affecting the case. Frank discussion, suggestions for the reading of helpful books, the establishment of close spiritual relationship, and directions for mental and spiritual hygiene were part of the treatment. Suggestion, in the form of a talk emphasizing the power of the mind over the body, and carrying soothing assurances of the power of belief and faith to remove the ills in question, usually formed the principal feature of more extended treatment.

The writer of this article draws the conclusion that through the Emmanuel work the church has an opportunity to "help men to be strong and holy and serene," to bring them a "new birth of wholesomeness and joy and peace."

Notes and Collateral Reading

[Numbers refer to pages in text]

Moral Convictions and Health

89. In the absence of all religious conception, of all peremptory morality, the thinker feels the unspeakable trouble which results from a life where egotism prevails. To find complete happiness and health we must then turn our attention away from ourselves and fix it upon others; altruism should take the place of native egotism. This tendency cannot carry us too far, and we risk but little in forgetting ourselves completely. Is this not so?

In this domain of higher morality our step at best is as unsteady as in the mental hygiene which we should oppose to physical ills and vexations. Here, also, we have need of all possible moral assistance. Those whose turn of mind still permits of a simple faith find a support in their religious convictions if they are sincere and lived up to. Those whose reflections lead them to be free thinkers find in themselves, in a stoicism free from egotism, strength to resist all which life brings them.

—Paul Dubois, M.D., "*The Influence of the Mind on the Body*," 1906, p. 60.

Necessity of a Diagnosis

90. I have been much interested personally during the past two years in applying the methods of psychotherapy and reëducation, and can testify

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to the value of these methods of treatment in selected cases. It must not be forgotten, however, that the first and most important point in consideration of functional nervous diseases is the making of an accurate diagnosis. Every physician is surprised at the number of times some form of incipient organic disease exists in people who are supposed to be simply nervous. No one who is not skilled in all the modern refinements of diagnosis should undertake the practice of psychotherapy unless his work is controlled by a diagnostician who exhausts the best methods in the study of his case before beginning the therapy.

—*Llewellys F. Barker, M.D.*

Effect of Emmanuel Work on Parish Activities

95. The significance of the clinic in the parish life this year past will perhaps become most surely evident when I state that during this year past I have paid eleven hundred parish calls as compared with one thousand the year before, the church closed the year 1907 with the largest surplus in its history, and received besides last Easter day the most generous Easter offering of which the treasurer's books have any record, and the organizations with but two exceptions have had the best year in their existence, thanks to the consideration and coöperation which the rector has received from all concerned.

—*L. P. Powell.*

Glossary

- Abiogenesis*, the production of living things from not-living matter.
- Aboulie*, having the will-power impaired, or lacking. *Aboulia*, or *abulia*, is a recognized form of mental derangement.
- Afferent nerves*, nerves conveying impulses toward a nerve center. The sensory nerves, that is, those conveying sensations, are of this sort.
- Amnesia*, loss of memory. More especially it means inability to recall or to comprehend a particular word or a certain kind of words.
- Brachial monoplegia*, paralysis of one arm.
- Catalepsy*, a condition in which there is a suspension of consciousness and stiffness of the muscles.
- Cell*, in anatomy the minute bodies, or form elements, out of which living tissue is built up.
- Cerebellum*, the little or hindbrain. It is the part of the brain situated below and behind the cerebrum, which is the larger, upper portion of the brain. The cerebellum has to do with regulating and coördinating muscular movements.
- Cerebral*, having to do with the cerebrum, or forebrain. The cerebral hemispheres are the two halves of the cerebrum, one lying at the right, the other at the left side of the head.
- Cerebrum*, the forebrain, that portion of the brain which lies in front and above the other brain structures. It is the larger part of the brain and is divided into two hemispheres, the cerebral hemispheres. The cerebrum is especially concerned in conscious thinking.
- Commissures*, bands of nerve tissue connecting parts of the brain and parts of the spinal cord.
- Connotation*, that which a word indicates indirectly or by implication.
- Cortex*, the outer portion or layer of the brain, composed of gray matter.
- Deglutition*, swallowing.
- Dendrites*, outgrowths or branches of nerve cells of treelike form, dividing at frequent intervals.
- Efferent nerves*, those which carry impulses outward from nerve centers. Motor nerves, that is, those carrying commands to organs which result in motion, are of this kind.
- Forebrain*, the cerebrum, which see.
- Frontal lobes*, the forward portion of the cerebral hemispheres.
- Function*, the mode of action or operation proper to an organ or structure; the work of an organ.
- Ganglia*, plural of ganglion.
- Ganglion*, a collection or knot of nerve cells.
- Hemispheres*, the right and left halves of the brain.
- Histology*, that branch of knowledge which deals with the finer structure of living tissues; microscopic anatomy.
- Hypnosis*, the hypnotic condition; also the production of the hypnotic state, or sleep.
- Inhibition*, in physiology the checking or stopping of an action or function.
- Innervate*, to stimulate by a nerve.
- Invertebrates*, animals not having a backbone, or spinal column.

GLOSSARY

- Lumbar enlargement*, enlargement of the spinal cord in the region of the loins.
- Medulla oblongata*, the enlargement of the spinal cord within the skull.
- Monoplegia*, paralysis of a single part.
- Morphology*, the science that deals with the forms and changes of forms of living things.
- Motor nerves*, those nerves that carry impulses which cause movement in the animal body.
- Neural*, relating to nerve.
- Neurasthenia*, nervous exhaustion or debility.
- Neurasthenic*, one who suffers from nervous exhaustion or debility.
- Neurasthenoid*, partaking of the nature of neurasthenia, or nervous weakness.
- Neurologist*, one who has made a study of the nervous system; a nerve specialist.
- Neurology*, the science of the nervous system.
- Neuron* or *neurone*, a nerve cell, the element or unit in the construction of the nervous system. Neurons are combined into ganglia and nerve fibers.
- Neuropathology*, that branch of knowledge relating to the diseases of the nervous system.
- Neurosis*, disease of the nerves or nervous system.
- Obsessions*, nervous troubles in which the sufferer is beset with troublesome ideas and impulses.
- Pathology*, that branch of medical science which treats of conditions of the body in sickness, their causes, symptoms, nature, physiology, and anatomy; also the sum of these conditions, processes, and results in a particular disease.
- Phonation*, the production of sounds with the vocal cords.
- Physiology*, the science which treats of the functions or work done by the different parts, or organs, of animals and plants.
- Pituitary body*, or gland, a small rounded body attached to the under surface of the brain near the root of the nose, believed to have nervous functions relating to secretions.
- Pons Varolii*, that portion of the brain lying at the base of the cerebellum, or hind-brain, containing the nerve fibers that connect the two hemispheres of the cerebellum. "Pons," Latin for "bridge," alludes to its form as a connecting structure.
- Prehension*, the act of grasping.
- Prognosis*, a forecast or prediction of the course of a disease.
- Protoplasm*, in general, "living matter." It is a term applied to any part of a cell that shows signs of life. It is the active substance of all living things.
- Psychasthenia*, a form of functional nervous disease. "Sufferers from this trouble are much concerned about morbid ideas, or fears, or impulses of which they are fully aware, which cause them much suffering, but which they are able for the most part to prevent from being translated into action."—After Dr. F. T. Simpson.
- "Mental irritable weakness."—A. Forel, M.D.
- Psychiatric*, of or relating to mental disease.
- Psychiatry*, the branch of medicine that deals with mental diseases.
- Psychic*, having to do with the mind or soul.
- Psycho-analysis*, a method in psychotherapy which lays stress on separating and studying the various mental causes and conditions affecting the disorder to be treated.

PSYCHOTHERAPY

Psychology, the science of mind.

Psychoneuroses, mental diseases without recognizable changes in the organs of the body. Among the psychoneuroses are hysteria, melancholia, acute nervousness, and the like.

Psychopathological, of or relating to mental derangement.

Psychoses, plural of psychosis; any form of mental disorder, "especially derangement due to some disorder of the nervous system without discernible lesion of parts."—Standard Dictionary.

Sensory nerves, nerves conveying sensations; nearly equivalent to afferent nerves.

Soporific, causing sleep.

Sympathetic nerves, a set of nerves consisting of a nervous cord running along in front of the spine with which are connected a double chain of ganglia on each side of the spine and from which branch off nerves running to the inner organs of the body.

Therapeutics, the art or knowledge of healing, especially the department of medicine that relates to the action of remedies.

Traumatic psychoses, disorders of the mind resulting from mechanical causes.

1909

PSYCHOTHERAPY

A COURSE OF READING

VOLUME I—NUMBER 2

"This is the great error of our day
in the treatment of the human
body, that physicians separate
the soul from the body."—Plato.

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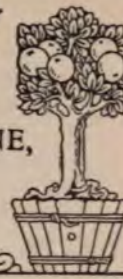


PSYCHOTHERAPY

A COURSE OF READING

IN SOUND PSYCHOLOGY, SOUND MEDICINE,
AND SOUND RELIGION

Edited by W.B. Parker



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Assistant Physician for Nervous Diseases, Boston City Hospital, has been prominently identified with the Emmanuel movement as consulting neurologist to the Class for the Treatment of Nervous Disorders of Emmanuel Church, Boston, and is joint author of "Religion and Medicine."

ROBERT SESSIONS WOODWORTH,

Adjunct Professor of Psychology in Columbia University, is an eminent investigator and teacher in the realm of physiological psychology. He was born October 17, 1869. His researches have included the psychology of movement and training, the electrochemistry of nerve, cerebral localization, and similar topics in line with the subject of his article in this number.

REV. CHARLES A. PLACE,

Minister of the First Parish Church, Waltham, Mass., writes from personal experience in applying the lessons of psychotherapy to his church work.

HERMANN OPPENHEIM, M.D.,

Professor in the University of Berlin, an expert in nervous diseases of international reputation, was born January 1, 1858, in Berlin. While he has published important scientific papers dealing with brain diseases, he is best known to a wider public by his "Letters on Psychotherapeutics," and by a collection of popular addresses of which that on "Nervous Ailments and Education" (Nervenleiden und Erziehung), from which we quote, is especially noteworthy for its practical application to modern social conditions.

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ical Clinic, edited by the psychologist, Dr. Lightner Witmer, of the University of Pennsylvania, refers to it. "Dr. Cabot in a remarkable article," it says, "invites attention to a consideration of the value of the social worker, whom he considers at the present day the only expert in the field of human character." It points to the successful coöperation of social worker and physician in the world-wide organization of medical and nonmedical societies to combat tuberculosis, and continues: "Of less general importance, but perhaps even greater significance, because it is a definite and concrete realization of the association of social worker and physician, is the social service department, organized and guided originally by Dr. Richard C. Cabot and Dr. James J. Putnam, which was first undertaken at the Massachusetts General Hospital, and since has spread to other hospitals. . . . From tuberculosis Dr. Cabot applies the same principles to nervous and mental diseases."

An awakening on a very practical phase of the subject is indicated by the fact that beginnings have been made at a few training schools for nurses, at Johns Hopkins Hospital, Baltimore, for example, to give instruction to nurses in psychology and psychiatry to enable them to use psychotherapy in their care of the mentally disturbed.

At Pittsburg plans have taken shape for the establishment of a clinic under the auspices of a nonsectarian organization to combine psychic and physical healing. Three physicians and three ministers are taking part in this enterprise. It is an outgrowth of the work of the Pittsburg Class in Mental Science and Practical Christianity.

The Young Men's Christian Association of Philadelphia found that a series of lectures by the Rev. Charles L. Kloss, of the Central Congregational Church of that city, given to its members, was received with such marked interest that an enlarged course of reading and lectures was arranged for, and the newspapers announced the possible establishment of a school of mental healing.

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cities. At Portland, Ore., the Rev. W. G. Eliot, Jr., one of Portland's foremost clergymen, pastor of the First Unitarian Church, is interesting himself actively in the Emmanuel movement. At South Weymouth, Mass., the Rev. H. W. Kimball is endeavoring to apply the lessons of the Emmanuel movement to his people in their everyday lives. At Chicago, Immanuel Baptist Church has followed the example of Bishop Fallows's church, St. Paul's, in helping the sick through spiritual means. At Brookline, Mass., the Rev. Dr. George L. Perin, at the Beacon Universalist Church, is carrying on an extensive programme of talks on psychotherapy, which will continue till Easter.

The churches which have already been engaged in this work are now carrying it on with increased vigor. Outside of the United States the application of psychotherapy in church work is likewise spreading. According to Dr. Worcester, of Emmanuel Church, there is a class of five hundred studying the subject at Tokio, Japan, and work has been started at the Cape of Good Hope, South Africa, in Australia, and in Ireland.

The First Article

IT is one of the fascinating things about the study of psychotherapy that it throws new light upon everyday affairs. It surprises by revealing unsuspected powers in commonplace things. Dr. Cabot in the first article of this number shows us something of the operation of these familiar yet wonderful means employed in psychotherapy. "Creative assertion," he shows us, is a remarkable force continually at work in the world that can be used effectively in calling out subconscious energies, inner resources making for health. The mood for the successful use of psychotherapy, Dr. Cabot suggests here, is that of one who wrestles with fate to score a win. In such hints as these it will probably not be difficult for the reader to find a personal application and inspiration. The task undertaken by Dr. Cabot in his first article, in No. 1 of the Course, of clearing the field of psychotherapy from confusion and pointing out some of its limitations and dangers, is carried still further in the present article.



PAUL DUBOIS, M. D.

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are five; and quite often succeeding in his attempt. Here are the political bluffers "claiming everything" before every election; and the real-estate boomers creating towns, with the aid of a great deal of assertion intended to be creative and a few signposts to show where streets ought to be.

We find it quite easy to condemn all these overexuberant tendencies of human nature. "All that," we say, "is mere bluff, and not much better than lying." But is it so clear? Do not these individuals succeed in creating somewhat of that which they affirm? The Christian Scientists probably do not make apple trees bloom, but they certainly do cure a great many people. Mr. Lawson does not increase the substantial value of his stock for investment. Yet he does create something: he "calls spirits from the vasty deep," and *something* comes, even though it is not the spirits. So your political "claim-everything" man probably produces some results, influences some votes by his claims, or he would not make them; and there is no question that the real-estate boomer does succeed, by mere force of reiterated assertion and contagious enthusiasm, in creating an atmosphere in which something more substantial can grow.

Can We Shape the Outcome of Disease by Assertion?

THE defense that such professional bluffers would make, if we arraigned them, would doubtless set forth that things are not fixed and finished; that what a man says does sometimes change facts; that since the world is in flux, it is "up to" anybody to shape it as it should be shaped. In the field of medicine arguments of this kind are often used to defend something very closely akin to lying as regards the expected outcome of disease. One of my best friends in the medical world, and one of the most successful practitioners that I know, defends the use of lies with regard to the outlook for disease by saying that in some cases the truth may make the patient worse. If the patient knows that you expect him to die, he is much more likely to die. In this case your assertion tends to

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produce its own verification, and we have here something like *destructive assertion*.*

My friend says, defending the use of lies, that he is not there to give an accurate, scientific description of the natural history of disease; he is there to help the patient, and he intends to do his duty from that point of view. He is not trying merely to state facts; he is trying to improve facts, and he is mighty sure that he can do it. He would be false to his duty, he says, if he tried to take the coldly scientific point of view, and to state precisely what he thinks is going to happen in the presence of a person already sufficiently burdened with the weight of disease. For no one knows exactly what is going to happen, says my friend; and in fact, what is going to happen depends more or less upon how much courage you succeed in infusing into the sufferer before you. It is not a case for looking on and describing what you see; it is a case for doing things, for wrestling with fate and scoring a win.

Some Strong Assertions Tend to Make Themselves Real

UNDER these conditions my friend, in common with many other good people, believes that his vehement assertion that the patient will get well tends to create its own truth, tends to make itself real. Doubtless the political "spellbinder," the real-estate promoter, the stock manipulator would make a similar defense (I mean the best of them, the more honest among them), and we cannot help perceiving that there is much that is plausible, even something that is true, in all this special pleading. On the other hand, how obvious it is that statements of this kind are perilously like lying, are dangerously near to imposture and quackery.

How are we to distinguish the justifiable and useful from the rascally and dangerous in this field? Or, to state the problem otherwise, when is a creative assertion valid, when is it the duty of a useful citizen to make it, and when is it mere lying? Obviously, these questions concern psychotherapy very closely; obviously, too, they extend far beyond that field, and confront us to-day in almost

* See note at end of article.

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What Do Creative Assertions Work?

IT IS EASY TO FIND SOME UNUSUALLY SIMPLE EXAMPLES OF
CREATIVE ASSERTIONS, AND THEN TO APPLY TO MORE DIFFICULT PROBLEMS
THE PRINCIPLES WHICH ARE ON A SMALL SCALE.

IT IS USUALLY TRUE THAT WE ARE PERFECTLY FAMILIAR WITH ASSERTIONS
WHICH WE MAKE OURSELVES WHEN WE ARE PERFECTLY USED TO AFFIRMATIONS
WHICH ARE CREATIVE. "May I give you some coffee?" says my
friend, and he looks at me. "Yes, you may," that
is a CREATIVE AFFIRMATION. It sets my friend's energies in
motion, and he goes to the kitchen. For every decision is to a
CERTAIN EXTENT A CREATIVE ASSERTION; it makes something true, it
creates a reality. The thing created may be perfectly
trivial, as in the case of the coffee, or it may be vastly important.
The decision to go to war was precipitated finally by some
small, trivial, unimportant decision by one or both parties.
It was the creative assertion seems to embody a plan
which is carried out and which is itself the first act of
the war. "I am going to walk," I say, and take up my hat at the
same time.

IT IS NOT TRUE THAT THIS IS IN FACT NOT SO MUCH THE SOURCE OF
THE POWER AS A CREATIVE ASSERTION. Some people say very
loudly what they are going to do, while others make a loud
noise when they are silent. Silent men are often the more efficient,
and more so the louder for their noiselessness. But even in such
cases there is a creative assertion: it is stated aloud or not, and that
assertion is the source of the power of the dream and the raising of the
curtain.

IF WE BEGIN WITH THIS ARTICLE (as I am sure we must) of
all disputes about free will, there can be no doubt of the force
of creative assertions within the sphere which I have just indi-

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cated. Doubts arise only when we begin to extend creative assertion beyond our own acts, our own persons, our own plans. It is when we begin to "boss" the apple trees, the political conventions, and the progress of disease that our way becomes so dark and devious.

Assertion Beyond Oneself. The Power of Command

CAN a creative assertion extend beyond oneself? Can we project our will into space and aim it at another person, or at inanimate nature? Certainly we can: as when we chop down a tree, explode a submarine mine, or model a statue. The only question is, How far does this power extend, and what are the laws governing its action? At first we are inclined to say that there must always be some direct connection between ourselves and that over which we exert our creative or destructive power. There is direct continuity between our hands and the tree we cut down, via the ax; there is continuity between our will and the submarine mine, by means of a piece of copper wire.

But does our power extend to objects totally unconnected with us? Most obviously it does, if by connection we mean material connection, such as exists in the case of the ax and the submarine wire. When a general says, "Up, boys, and at 'em!" he makes a species of creative assertion enormously effective, if he is the right man in the right place. The effectiveness of his command depends, of course, upon his relations to his men. It would not work with strangers, and to this extent his power is limited by a kind of connection—that is, by the ties of affection or authority uniting him to his army; but the connection is no longer an obviously material one.

In the control which a good conductor has over his orchestra, a good driver over his horses, a skillful demagogue over a mob, we see great forces for good or for evil set in motion by the assertion, the command, the hand, or the intention of a leader. There is no doubt whatever as to the fact. Our interest centers now in its interpretation. As regards that interpretation, the first step is, I

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melt and blend into one another in this speech, as in all the greatest feats of leadership. So the Hebrew prophets with their "Thus saith the Lord" are prophetic and creative as well as affirmative.

I have set these examples before you because I wish to remind you that in the sincerest and most effective leadership, of armies and of nations, not merely in the excesses and hypocrisies of stock manipulators, promoters, and Christian Scientists, there is a place for that creative assertion which molds the acts of others. But there is a difference. There are limits to what a great leader or a prophet can do, limits to what he will say. He recognizes them, and by obeying them fulfills his mission. The reckless "bluffer," on the other hand, ignores all such boundaries.

What the nature of these limits are, where creative assertion is marked off alike from simple lying and from fanatical exaggeration, it is not always easy to make clear either to oneself or to others; but I shall try to mark the distinction by analyzing still further some samples from each side of the dividing line.

Making Use of "Sympathetic Vibrations"

IF you lift the dampers from the strings of a piano by pressing the "loud" or sustaining pedal and then sing a good loud note, the corresponding piano string will answer with the same tone. Sing an arpeggio, or any series of notes, and the piano will instantly copy them, though somewhat faintly. This well-known experiment depends on the principle of "sympathetic vibration." It is perfectly easy to get the result, provided you obey the laws of sound; otherwise it is impossible. If you press by mistake the wrong pedal, or if you press the right one, and it is not in good working order, you can sing away all day without getting any response; but with the dampers lifted, you "can call spirits from the vasty deep," and they will come. Provided all the conditions are right—all the notes of your voice represented by intact piano strings, none broken, and all free to vibrate when the sound wave hits them—and provided you have a fairly loud voice and are not too far from the piano, then

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oversensitive to the influence of others or of fortune in any form. What such persons need is, above all, to cultivate their inner resources,* to strengthen their powers of defense against the discouragement, the anxiety, the depression which may flow into them as the result of whatever disagreeable or threatening events they meet. Nervous people are prone to take the color of their surroundings; they are oversensitive to the buffets and shocks of life. They need, above all, the power to resist, to shut out, to turn away from the compelling assertions of their environment, whether that environment be a commanding person, or a murky day, or a pain.

Now, nothing is more obvious than that it is much easier to preach than to practice in this field; yet it is the first principle of all therapeutics, whether chemical, physical, or psychical, that we shall strive above all things to do no harm; and if it is true, as I believe, that oversensitiveness to the suggestions or assertions of others is one of the features which we most want to eliminate by psychotherapy, we must regard as a double-edged tool any method of treatment in which suggestion plays a large part.

Danger of Overstimulation

A GREAT deal that is done in the name of "inspiration" possesses this character of a double-edged tool. Inspiration is what we need in emergencies, or perhaps on especially convivial occasions, but not as a steady diet. To be continually roused and roused again, to have our emotions stirred, our impulses excited again and again at short intervals, is not conducive to a healthy spiritual life. We want what will steady us, what will sanify us, what will give us a firm grip upon our daily tasks.* There is already overmuch in our American city life of overstimulation; our streets and our newspapers are full of it; and whoever feels very frequently that his chief need is for inspiration is, I think, in a dangerous state. He goes perhaps to his minister, or to his doctor, and gets what he seeks. The minister and the doctor can hardly be expected to understand in every case that there are dangers in giving people what

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they seek, even under the name of inspiration; dangers, to wit, of weakening the power of initiative, of weakening the power to paddle one's own canoe, to solve one's own problems with the help of such powers as we can win for ourselves through sober meditation or through prayer.*

Power to Call Out Unused Energies Depends on Knowledge

IN what I have said I have endeavored to show, first, that *in creative assertion our fiat may work in so far as we penetrate sympathetically or by scientific comprehension of natural law the persons or things around us*. Even in our own actions, our freedom of creative assertion is obviously and grievously limited. The man who says "I will succeed in business" finds his affirmation crowned with success only in so far as his assertion is the prelude to an intelligent comprehension of the situation around him. If he is keen enough, or hard-working enough, to discover a rising wave on whose back he can ride to success, his assertion will turn out to be creative—otherwise not. So the boy who says "I will learn to jump a five-foot bar," may be answered, "Yes, if you train, develop, practice properly; otherwise you will probably be limited to the jumping powers of the ordinary man, about two feet and a half perpendicularly."

When we go beyond ourselves, there is no question that we do find ourselves possessed in some cases of the power to free each other's energies, to evoke, to disengage, to focus unused powers; but only if we understand the lives or tissues which we undertake to enter. We do not yet understand cancer, Bright's disease, or broken legs in any way so intimate as to make possible the success of our fiat, or even of our prayer, for their healing. The assertion, "I will cure you," or even "God will cure you," may be powerful or powerless, according to the degree of our penetration of the mysteries of health and disease confronting us. Disease may be as stubborn as a mountain, and as irremovable by the faith or by the affirmation of the ordinary man. On the other hand, disease may

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be quite plastic, quite yielding. There is nothing in advance of actual experience to tell us to which of these two classes a given disease belongs.

An Intelligent Appeal to the Whole Man

WE must discover, step by step, what we can do by physical, by chemical, and by psychical means. There is nothing self-contradictory in the cure of cancer or any other organic disease by psychical means; but the facts seem to me to show that cancer has not been so cured. No one would have expected that insanity would be as obdurate, as impenetrable as it is to all our therapeutic efforts, mental and physical alike. No one could have anticipated that the activity of our bowels would be so largely controllable by our mental and emotional life; yet such appears to be the fact.

Only by experience, by unprejudiced inquiry, can we learn to predict what is to be accomplished by anyone's assertion. Its powers are great, its dangers are great; we must steer our way sanely and cautiously, without groundless dread or groundless confidence.

But, above all, let us bear in mind that it is by a catholic inclusiveness of all that is good in many methods of attacking disease, and by an effective combination of explanation, education, command (or suggestion), joined with all the other therapeutic resources, psychic, chemical, and physical, that the American type of psychotherapeutics can hope for success. Let us search for no panacea, neglect no aspect of human nature, make no *exclusive* appeal to the conscious, the subconscious, the physical, chemical, or biological sides of human nature. We want to cure the whole man, not any section of him. Is it not obvious, then, that we should study every element of human nature, and try to understand as best we may the complex interactions and team work of body and soul?

In the next paper of this series we shall undertake this task.

—Richard C. Cabot.

Editor's Summary

The progress made in our study of psychotherapy by means of Dr. Cabot's article may be indicated thus:

1. The workings of mental influence as a healing force can be better understood through knowledge of the meaning in everyday life of what Dr. Cabot calls "creative assertion." This is, in other words, the shaping of thoughts and actions, of states of body and mind, by means of positive statements or commands, or by willing things to be.

2. Dr. Cabot gives an idea of the scope and power of this form of influence by references to Christian Science, to the "bluffing" of business life, to the experience of physicians, and to common occurrences in everyday affairs. These examples, he indicates, show that creative assertion is far-reaching. It may create values in business, shape the outcome of disease, and set in motion "great forces for good or for evil by the assertion, the command, the hand, or the intention of a leader."

3. What the limits are to this kind of creative assertion Dr. Cabot illustrates by a comparison to the "sympathetic vibrations" in music. As these can be evoked only when the laws of sound are obeyed, so in making creative assertion work it is necessary to "penetrate sympathetically or by scientific comprehension of natural law the persons or things around us."

4. Dr. Cabot emphasizes the dangers of a wrong use of creative assertion. It may, for instance, do harm when exercised on suggestible persons by overstimulation. A safeguard is supplied by self-cultivation of inner powers of resistance and initiative, as by meditation or through prayer.

Notes and Collateral Reading

[Numbers refer to pages in text.]

11. *Destructive Assertion*.—I have seen a girl, fourteen years old, who, at ten years of age, had received from a baby a blow with a drumstick on the left shoulder. There had been a sharp pain in consequence, but there was no lesion at all. The cure would have taken place in a few hours if the physician had known how to calm the little girl. But he stated before the patient: "This is serious, very serious! It is traumatic neuritis. I would much rather that the patient had broken both her arms!" The nervous pains lasted four years; the pain extended to the back and to the right arm, without any sensory or motor paralysis or atrophy occurring to confirm the existence of neuritis. Here is a disease created out of whole cloth by the physician.

—Dubois, "*The Psychic Treatment of Nervous Disorders*," 1908, p. 232.

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18. *Cultivating Inner Resources.*—As a rule, men habitually use only a small part of the powers which they actually possess and which they might use under appropriate conditions. Compared with what we ought to be, we are only half awake. Our fires are damped, our draughts are checked. We are making use of only a small part of our possible mental and physical resources. In some persons this sense of being cut off from their rightful resources is extreme, and we then get the formidable neurasthenic and psychasthenic conditions, with life grown into one tissue of impossibilities, that so many medical books describe.

Stating the thing broadly, the human individual thus lives usually far within his limits; he possesses powers of various sorts which he habitually fails to use. He energizes below his maximum, and he behaves below his optimum. In elementary faculty, in coördination, in power of inhibition and control, in every conceivable way, his life is contracted like the field of vision of an hysteric subject—but with less excuse, for the poor hysteric is diseased, while in the rest of us it is only an inveterate habit—the habit of inferiority to our full self—that is bad.

—Willis James in *The American Magazine*, November, 1907.

18. *Steadying Ourselves.*—The task involved, in keeping a grip upon ourselves, using the power of “creative assertion” to enable us to sanify ourselves and to put a check upon overstimulation, to which Dr. Cabot refers, is well described by the famous psychologist Professor William James, of Harvard, in a passage in his article on “The Powers of Men,” in *The American Magazine* for November, 1907.

“Let no one think, then,” writes Professor James, “that our problem of individual and national economy is solely that of the maximum of pounds raisable against gravity, the maximum of locomotion, or of agitation of any sort, that human beings can accomplish. That might signify little more than hurrying and jumping about in incoördinated ways; whereas inner work, though it so often reënforces outer work, quite as often means its arrest. To relax, to say to ourselves (with the ‘new thoughts’) ‘Peace! be still!’ is sometimes a great achievement of inner work. When I speak of human energizing in general, the reader must therefore understand that sum total of activities, some outer and some inner, some muscular, some emotional, some moral, some spiritual, of whose waxing and waning in himself he is at all times so well aware. How to keep it at an appreciable maximum? How not to let the level lapse? That is the great problem.”

19. *Self-mastery.*—The importance of encouraging the nervous sufferer to place reliance in himself, which Dr. Cabot emphasizes, is recognized by neurologists generally. Dr. Hermann Oppenheim, a widely known nerve specialist of Berlin, has shown himself especially proficient in teaching the methods used in securing this result. In an introduction to an

GENERAL SECTION

ARTICLE IV

The Psychology of Health¹—I

BY JAMES JACKSON PUTNAM, M.D.

Professor of Diseases of the Nervous System in Harvard Medical School

The Value of Living Convictions

EFORE touching on the stated subject of this article, I wish to revert for a moment to the last one.

It is not customary to introduce speculative reasoning of the sort there used into the study of the practical problems of psychiatry. People who wish to be practical, and honest with themselves, often prefer to confine themselves strictly "to the task before them," like some one who was recently quoted to me as saying that he "did not care to know about a man's past, but only about his future." Chesterton maintains, in his essay on "Heretics," that the tendency to regard "general points of view" as of trivial value is characteristic of our practical age. He holds that the contrary attitude should prevail, and I sympathize with his plea that it is more important to know the "philosophy," the general attitude toward life of a man with whom one is called upon to deal than to know anything else about him. Certainly the persons who have had the good fortune to feel themselves carried along by really living and broad convictions, based partly on experience and partly on thorough study of the rational evidence furnished by philosophy, are in a position of immense advantage, whether as physicians or as patients. Emerson was eminently such a person. Pascal was, presumably, another, whom his biographer quotes² as asserting that

¹ See note under "The Next Article" on preceding page.

² Cited in "Masters of Fate," by Sophia P. Shaler.

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oneself to realize from time to time, through a special effort of the intelligence, the existence and significance of the unpicturable world of mental realities spoken of in the last paper is a useful preparation.

It should happen that as the physician's mind penetrates more and more deeply the mind of the patient he illuminates his own in like measure, just as a river in time of freshet inundates the meadows behind the point at which it leaves its bed as well as those in front.

A Composite Picture of Health

THE remainder of this paper and the one following will be devoted, first, to the determination of the various elements which should enter into our definition of "health"; next, to the study of the organization of the best types of healthy persons, and especially the healthy-minded persons. In all this the emphasis will be thrown upon the view that the proper point of departure for the study of the individual lies in the recognition of the creative power of his consciousness, rather than the "determinism" of his automatic and reflex mechanisms, as affording his best means for realizing his ideal life.

How shall we define health? The very mention of the word rouses a pleasing emotion in the mind. It suggests a composite picture indicating physical beauty, vigor, cheerfulness, serenity and elasticity of temper, capacity to take all trials as natural problems, a condition in which reason takes the lead, emotion reënforces reason, and the experiences and memories of the past promptly rush to lend their aid in solving the riddles of the present.

It is much easier to draw a picture of this sort than to rest satisfied with it when drawn. The present paper is principally concerned with mental health, and it is impossible to go far toward defining this without realizing that mental health may be of several different sorts. Two kinds of mentally healthy persons are especially easily discernible; those who are cheerful, sunny, elastic in temper, simple in disposition, a comfort to their friends, capable of sound judgment; and those whose characteristics are of the nature

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due measure of what may be defined as instability. Theoretically neither of these tendencies should be present in excess, but the exigencies of a constantly changing environment bring it about that one or the other of them is always in excess.

Is it possible to discover the criterion of health, for which we seek, in the power to transmit health to one's children? This test is of value, but is not conclusive. All we can fairly say is that the health of the germ cell, on which the condition of the next generation is to depend, is more independent of the health of the individual who bears it than is usually realized. There may lie concealed in it ancestral tendencies, of favorable or unfavorable sorts, that circumstances or subtle principles of growth prevent from showing themselves during his lifetime, or, conversely, cause to show themselves in an exaggerated form, while in the case of his children the outcome may be reversed. The favorable side of this principle is that men and women may transmit far better health than they have shown, since while unfavorable conditions of living, or even abuse of health, on their part may injure the vigor of their germ cells in some measure, they usually injure them less than they do many of the other functions of the body. It is also true that, on the whole, the influences among families and races looking toward improvement of the type are usually more numerous and more powerful than those which work in the reverse direction. This statement, however, is to be taken only in a very general sense. It will be discussed further in another article of this course.

Difficulty in Defining Health Except as a "Direction"

IT is just as well that this difficulty in defining health should be generally recognized. Those members of the community who have reason to congratulate themselves on a superabundance of physical vigor are none the worse for being made to pass from time to time through the valley of humility, while those to whom accomplishment means constant effort and who are too much inclined to shrink back out of the game, overcome by a sense of isolation and discomfiture, need the encouragement of good-fellowship.

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If we begin by admitting that we are all like the tailless foxes in the fable, we can proceed to travel without much protest in each others' company.

These considerations are urged not from any wish to quibble away the glorious significance of the word "health," but rather to endow it with a wider meaning. It is not desirable that the mansion of health should be preempted by any particular group of self-satisfied persons just because they happen to be the first-comers. What we really need, sick and well alike, is to know the causes of our weaknesses and the principles which will guide us to increased vigor and efficiency. For these purposes we need to describe health, not as a "place" or a "condition," but rather as a "direction,"

". . . an arch wherethro'
Gleams that untravel'd world, whose margin fades
Forever and forever when I move."
—Tennyson, "Ulysses."

For everyone, even for the "well," there are always new worlds to conquer, new adaptations to establish.

Increased Attention to the Organism's Power of Reparation

IT is important to remember that the immense development of the anatomical sciences, the increased tendency to the use of the instruments of precision, during the past half century, and also the immense advance in the direction of the physical diagnosis of disease, just because they have made possible the more accurate recognition of the losses and ravages which are entailed by illness, have emphasized these losses and made us relatively blind to the extraordinary capacity on the part of our organisms to recover their broken equilibrium, or to create new ones perhaps better than the old.

There are many signs that this tendency toward the anatomical study of disease is being supplemented at the present day by a more thorough study of function, a fuller recognition of the fact that when the organism is considered as a whole, it is found to be pos-

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sessed of capacities for reparation of its losses which would not have been suspected if the anatomical conditions of the part diseased had alone been taken into account.

The increased attention to the anatomical aspects of disease processes was supplemented about twenty-five years ago by an overstrained recognition of the principle of "degeneracy" through hereditary tendency. Fortunately, the term "degenerate" has now lost some of the disheartening connotations which it for a long time possessed. The objection to it is not so much that it draws an unnecessarily sad picture of the results which may flow from lack of balance or arrest of development of the nervous functions, but because it implies too strongly our right to assume a normal standard, and thus affords too manifest temptation to personal comparisons of unfavorable sorts. Of what advantage is it that critics¹ should classify as "degenerates" men like Ibsen, Wagner, and Zola, or even persons far below them in talents and in usefulness? Let them stand for what they are and let their peculiarities be described, but let us shrink from designating them as departures from a "normal type."

"Health" and "Disease" Relative Conditions

NEITHER health nor disease is a definite condition. Both represent relative adjustments and relative failures of adjustment to particular surroundings. Health is an endurable equilibrium, and nothing more. There is no state of health that is not touched with disease, and no state of disease that may not be penetrated with signs of health.* There is no limitation which may not be the starting-point of new progress. One of the most striking features of the illness of a patient struggling with the poison of typhoid fever, for example, is the marvelous force that he develops in staving off the dangers that threaten him; and, on the other hand, it is only by voluntarily making constant sacrifices and creating limitations, by stunting himself, as it were, in many directions, that a man is able to make himself effective in some one direction.

¹ Max Nordau, "Degeneration."

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In order to become what we are we have abandoned many of the splendid qualities which stamped the races of animals that preceded us in the scale—the strength of the horse, the scent of the dog, the swiftness of the deer. Although we have reached a state in which we are tolerable members of society, and by the aid of mutual criticism and mutual support can live together and progress, yet, in fact, each person may be likened to a squadron of ships, the safety of which is constantly being jeopardized by the slowness and weakness of its weaker members. Our brains are our best possessions, and for their success, and in order that we might use our hands in other service, we have assumed the upright posture; but aching backs and varicose veins suggest the price we pay. The appendix is but one of many organs, presumably once useful, but now a source of danger. The hand of the ape was well adapted for climbing, and the forces of evolution have modified it for us by adding the rotation of the thumb, so that it is marvelously adapted for many purposes; yet rueful tales told by school children and clerks show how ill suited the fingers are for running scales upon the piano or guiding the pen upon paper.

—J. J. Putnam.

Editor's Summary

Dr. Putnam's article aims to give an idea of what really is meant by health, the object which psychotherapy strives for. The general argument of the article goes to show that in the definition of health, mental order and self-poise are the most important elements. These qualities, Dr. Putnam reminds us, referring to his first article, are founded on clear ideals and a hopeful philosophy of life.

Dr. Putnam gives first the general description of health. He then deals with the signs of health, and the factors that enter into it as a psychologist sees them.

The main headings of Dr. Putnam's discussion, therefore, may be grouped thus:

1. The General Description of Health.—Health implies physical beauty and vigor, serenity and elasticity of temper, and actions governed by reason.

2. The Factors and Marks of Health.—We may consider these divided in this way:

- (a) Mental health is the chief factor in general health, because the

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mind is, in a sense, the "parent" of the body. The mind, in other words, organizes "habits" which crystallize into "structures."

(b) *The Marks or Signs of Health.*—Health must be judged (1) partly by traits which, apparently hidden, appear in other members of the family, (2) by the capacity of the individual to change, to adapt himself to his surroundings (health representing largely the ability to become effective in some direction), (3) by the power to transmit health to offspring, (4) by the power of the body to repair damage and make up for shortcomings.

It follows, Dr. Putnam points out, that health and disease are not definite conditions. Health must be thought of as representing an equilibrium, as a relative adjustment of the person to particular surroundings.

Thus some qualities that once marked health and efficiency are now disadvantages, and the reverse. Seeming disease often means, therefore, the starting-point of new progress.

This view of health, especially as applied to mental health, here put forth by Professor Putnam, will be further developed in his next article. It is one that should be borne in mind in connection with the aims and practice of psychotherapy.

Notes and Collateral Reading

[Numbers refer to pages in text.]

25. *Mental Origin of Disease.*—A great deal of alleged physical suffering is primarily mental. A great many people have "fixed ideas" of disease, pain, debility, fatigue, dread, inefficiency, and inexpressible woes. Much oftener than we realize, these can be transplanted without surgery or medication. I do not mean that they are not real sufferings. They are as real as the grave. But they are not grounded in physical infirmity, and they are not to be cured with physic. The mind becomes possessed of a conviction that a certain part of the body is infirm, and imputes pain to that part in spite of all the medicine in the world. Hundreds of people refuse to get well after the physician has cured them. It is not his fault, and it is not their fault; but they have simply had disease suggested to them until they cannot think at all except upon that assumption.

—Max Eastman in *Atlantic Monthly*, May, 1908.

31. *Health and Sickness Relative Conditions.*—At what stage do indecision, irritability, impressionability, emotionalism become illnesses? Is sadness, is pessimism, a fault or an ailment?

Even in bodily sickness it is often difficult to fix the dividing line between health and sickness. At what height, in climbing, is it right to have palpitation of the heart or difficulty in breathing? Are you sick

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because you are not able to stand a meal which your friend digests with ease?

It is still more illusory to attempt to make this distinction in the realm of mind. It does not seem to exist except as one looks at the extremes.

It seems quite normal to us to be sad because of the loss of a loved one, to be discouraged in the presence of failure; but we look upon the person who commits suicide in order to escape obstacles which we all overcome as diseased. We all have our indecisions, which often seem exaggerated to the eyes of others; but we send to the doctor as sick the person who passes hours in an anguish of perplexity without being able to decide whether he will change his shirt to-day or to-morrow.

—Paul Dubois, M.D., "*Les Psychonévroses et Leur Traitement Moral*," 1909, p. 70.

The Next Article

EDITOR'S NOTE.—The interesting story of Healing in the Old Testament, as carried forward in the following article, reveals more plainly the importance of psychotherapy in biblical history. The knowledge of mental influence in disease shown by the Old-Testament prophets according to Dr. Batten's account was very considerable. The prophets' healing was based upon the conviction that sickness came from God, and that God could take it away. To this Old-Testament belief Dr. Batten referred in his article in the historical section of No. 1 of this course. It is further illustrated in the present article. Recognition of the healthy effects of a moral life and of the power of an appeal to God as here shown furnishes a direct parallel between Old-Testament Healing and present-day methods as used in the Emmanuel movement.

In the next number of the course Dr. Batten will conclude his account of Healing in the Old Testament with the narration, in the light of modern criticism, of the most striking stories involving the application of psychotherapy contained in this portion of the Bible.



HISTORICAL SECTION

ARTICLE II

Healing in the Old Testament¹—II

BY THE REV. LORING W. BATTEN, PH.D., S.T.D.

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IN a contribution in the preceding number of the Course the subjects of the cause and character of diseases as presented in the Old Testament were discussed. The matter which now invites attention is their cure. It is necessary to learn all we can about the sources of sickness, and to know as accurately as possible its true character. But from the point of view of the patient the supreme need is cure. The ancient Hebrews were alive to this want, and we shall address ourselves now to the therapeutics of the Old Testament. First, we shall see what classes undertook the cure of disease.

Among all conditions of people, every adult is, to a certain extent, his own doctor. Most households have at hand a few simple remedies which are called into requisition for trifling maladies. Many people urge upon their friends medicines which have relieved themselves. The more primitive the life, the more perfectly that condition holds, and the larger is that practice found. For primitive conditions are marked by sparseness of population, so that doctors, if they are to be had at all, must often be brought from a long distance.

In ancient Israel there was much of community life, but still there were plenty of small and scattered hamlets. We may be sure, therefore, that there was much domestic administration of medicine. Nevertheless, the records, abundant information as they offer about many phases of social life, are almost silent in this respect.

¹ See note under "The Next Article" on preceding page.

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There are some cases in which therapeutic measures are advised by laymen, and these will be brought out in the course of our study.

Priest, Physician, and Prophet

ON the other hand, there is no people so uncivilized as not to have some kind of medicine man, who is called upon usually for all disorders of a serious nature. Among the Hebrews we find three professions which dealt with sickness—the priest, the physician, and the prophet. The prophetic function of healing will be best considered at a later point. The interesting cases of healing were all wrought by prophets, and must be discussed somewhat fully. Of the priests in relation to therapeutics we know but little. As we have already seen,¹ the diagnosis of leprosy and the certification of its cure were left entirely in their hands. That they were chiefly responsible for the enforcement of the important sanitary laws, of which more presently, is sure from the religious character of these. Their office was certainly important on the side of the prevention of disease, but there is no record of their attempting in any way to give relief to the sick.

The Physician in the Old Testament

THE only distinctly professional class of healers was that of the physicians. The word physician occurs but four times in the Old Testament, and is not a distinctive term, being a common word and meaning a healer. The first mention carries us to Egypt, where Joseph directs "his servants, the physicians, to embalm his father" (Gen. 1, 2). They were, of course, Egyptians, but from the Hebrew term applied to them they must have been more than undertakers. The embalming was but a part of their professional work.

The second reference is Jer. viii, 22: "Is there no balm in Gilead? Is there no physician there?" From this it appears that the physician was the administrator of medicine, and not primarily

¹ See No. 1 of the Course, page 51.

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a surgeon, as some have supposed. It appears that Gilead was famous for its physicians as well as for its balm. The physicians were foreigners, therefore, as in the time of Joseph. Neither Graf nor Duhm regard this class as foreign; but the inference seems to me inevitable and illuminating.

The medical profession was not very highly esteemed in Israel. In one of Job's discourses we find this couplet:

" But ye are forgers of lies:
Ye are physicians of no value."

—*Job xiii, 4.*

The reference has, indeed, that quality of obscurity which is so marked a feature in this great book; but it is difficult, in view of the principles of Hebrew parallelism, to think the author had a high opinion of doctors. This antipathy is still more marked in II Chr. xvi, 12, where it is charged against the aged and gouty Asa that "in his disease he sought not to Jehovah, but to the physicians." What was the ground of that hostility? Had the Hebrews ideas about the profession similar to those of the Christian Scientists? Or were the physicians so irreligious that consulting them was equivalent to abandonment of God?

It is very probable that the real objection to the doctors was that they were foreigners, as stated above. In the post-exilic period the Jews made a vigorous effort to separate themselves from all foreign influences. Ezra's great divorce is witness to that (Ezra ix, x). At a later period the reputation of this class improved, for in the Son of Sirach there is high praise for the physician (Ecclesiasticus xxxviii, 1-15). The passage, too long to quote, shows that the doctor had become religious, and the profession may have been taken up by Jews.

Religion Employed to Prevent Sickness

THE avoidance of sickness is better than its cure. The Hebrews were alive to the importance of precaution against disease. Their sanitary code is the best evidence of this. The Jews burned

garments and destroyed houses that were infected with leprosy. They classed animals as clean and unclean (Lev. xi, xvii; Deut. xiv)—that is, as fit to eat and unfit—and the distinction made in the Jewish law holds pretty generally to-day. They forbade the Jews to eat an animal which died of disease. They forbade the eating of the blood with the flesh, one of the earliest and most generally observed of the Hebrew laws.

It is true that nothing is said about the preservation of health in any of this legislation. Every prohibition is given the sanction of religion. But that was necessary for its enforcement. To-day you can scare people from unwholesome food by raising the specter of indigestion or bacteria; you would make very little impression with a religious ban. In old Israel the converse was true; the Hebrew did not fear his stomach, but he did fear his God. At its heart there was a vital truth in the principle. God cares about the health of the body as well as the peace of the soul. "Thou shalt not eat" may on occasion be divine as well as "thou shalt not steal."

Belief that Healing Came from God

THE guiding principle in Hebrew, as in Christian therapeutics, is that all healing is of God. This is the natural sequel to the conception that sickness was sent of God. The one who kills can make alive, and he who wounds can heal (Deut. xxxii, 39). For illustrations* of this idea the following passages may be consulted: Ex. xv, 26; xxiii, 25; Num. xii, 13; Deut. vii, 15; Is. xxx, 26; Jer. xvii, 14; xxx, 17; Ezek. xxxiv, 16; Ps. vi, 2; xxx, 2; ciii, 3; cvii, 20; cxlvii, 3; Sir. xxxviii, 2. There is no overlooking of agencies, though, as we might infer from a pious exegesis which has sought support in the miraculous. Healing did not cease to be of God because some earthly means was employed.

Healing was regarded as a duty. The prophet Ezekiel, whose messages were delivered by the Chebar in Babylonia, but whose heart was always at Jerusalem, reproached the shepherds of Israel

* See note at end of article.

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because they took no proper care of the flock. Among the charges laid at their door are these: "The diseased ye have not strengthened, and the sick ye have not healed, and the wounded ye have not bound up" (xxxiv, 4). That passage belongs to a late period, the time of the exile of 586. There is another reference in the earliest code of Hebrew law. If two men got into a fight, and one of them in his mad passion struck down his opponent with fist or a stone, so that he was temporarily disabled, the assailant was required to pay for the loss of his time and for medical attendance: "shall cause him to be thoroughly healed" (Ex. xxi, 19). That statement is important, for it shows that it was the custom in early Israel for the wounded person to have expert care of his injuries, and that the care was given by a class who charged for their services.

Medicines: The "Balm of Gilead," etc.

AMONG the curative agencies medicine is naturally put in the first place. The remedy that we hear most about is the famous "balm of Gilead." But it is not known what it was used for, nor indeed exactly what it is. Some claim that it is the gum of the mastic tree, but Post, in Hastings's "Bib. Dict.," argues for a true balsam. It was an important article of commerce in the patriarchal period (Gen. xxxvii, 25), and at a much later day (Ez. xxix, 17); it was highly esteemed, and so served as a present (Ez. xliii, 11); but it was especially prized for its medicinal properties (Jer. viii, 22; lxvi, 11; li, 8). From the last citation it appears that the balm was used for the relief of pain, but in this case the pain may be that caused by wounds.

We may infer from a passage in Ezekiel that the leaves of various trees were used as medicine (xlvi, 12). A chance reference in Jeremiah discloses the general dependence upon medicinal aid: "Thy hurt is incurable, and thy wound grievous . . . thou hast no healing medicines" (xxx 12 f.). The wound could not be healed because there was no medicine to apply. Another passage in this book shows the same idea: "In vain dost thou (i. e., Egypt) use many medicines; there is no healing for thee" (xlvi, 11). All

these references suggest external remedies applied to wounds. The use of medicines internally does not seem to have been in vogue among the Hebrews at any time. Perhaps, on the whole, the health of the people did not suffer as a result. Certainly that nation was happily delivered from one of our afflictions, the source of untold mischief, the corner drug store with its vast array of patent medicines.

There is a hint of certain more or less fabulous curative agents, like the mandrakes or love apples which figure in the jealous strife between Leah and Rachel (Gen. xxx, 14 ff.), and which were valued also for their fragrance. Then there is the tree of life, from eating whose fruit one would become immortal (Gen. iii, 22). The value of such a tree arose from the belief that a spirit dwelt within it.¹

The Treatment of Wounds

IN the treatment of wounds there are references which show that, in addition to the application of medicines, the art of bandaging was known and practiced. Thus in Is. i, 6, the wounds "have not been closed (the open parts pressed together), neither bound up, neither mollified with oil." (See also Is. xxx, 26; lxi, 1; Hos. vi, 1; Job v, 18.) There is a single passage which reveals the method of setting a broken bone (Ezek. xxx, 21). The replacement was effected as now by bandages, and medicine was applied, perhaps with the same idea that impels people now to bathe the skin over a deep internal pain. Probably such remedies have a wholesome mental influence.

Feeding, Rest, and Other Aids to Recovery

THE value of feeding was well known. David restored the unconscious Egyptian with food and water (I Sam. xxx, 11 f.; cf. xiv, 31 ff.). This remedy was applied even in nervous or mental exhaustion. Thus the witch of Endor revived the fainting Saul with food (I Sam. xxviii, 24 f.). Elijah fled to the desert, and was so dispirited that he prayed for death. The angel knew that he

¹ Astley, "Prehistoric Archaeology and the Old Testament," p. 159.

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needed sleep and food, in the strength of which he traveled forty days and nights (I Kings, xix, 8).

To describe the depth of Job's misery the author says that he scraped his sores with a potsherd (Job ii, 8). That remedy could hardly have therapeutic value. The purpose was probably to relieve an intolerable itching. Then there are interesting parallels to the use of our hot-water bottles, without which no house is completely furnished, and which is an invariable part of many a traveler's baggage.

The person of the invalid was respected by the Israelites. Though Saul, with murderous intentions, sent officers to bring David, his son-in-law, to the royal presence, they departed in peace when David's wife showed them the supposed object of their quest on a sick bed (I Sam. xix, 14). Perhaps somewhat similar is the case of Rachel, excusing herself from rising in the presence of her father (Gen. xxxi, 35).

Psychotherapeutic Measures; Cheering the Sick

IT was customary to visit the sick, doubtless with a message of sympathy and cheerfulness, and so at last we approximate psychotherapeutic measures. Ahaziah, the King of Judah, went all the way from Jerusalem to Jezreel to visit his royal uncle, who had been wounded (II Ki. viii, 29; ix, 16). So, when his friends heard of the frightful calamity which had befallen Job, they forthwith set out to see him, doubtless with a better original purpose than their conversation shows (Job ii, 11). Our Lord gave visiting the sick a high place among the virtues of a good man (St. Matt. xxv, 36, 39, 43 f.). A recovery from a serious illness was deemed a great event, and was celebrated by offerings and rejoicings. Berodach-baladan sends an embassy all the way from Babylonia to Jerusalem ostensibly to congratulate Hezekiah upon his restoration to health (II Ki. xx, 12).

The Hebrews understood very well the marked effect of good or bad news upon the sick or troubled. We may recall the cases of Saul and of Nabal (Volume I, p. 56). When Joseph learned of

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the grave illness of his father, he felt it a duty to pay him a visit, and when Jacob heard of the coming of his favorite son "he was strengthened, and sat up in bed" (Gen. xlviii, 2).

Music as a Psychotherapeutic Measure

THE wholesome effect of music upon the mentally deranged is well illustrated in the life of Saul, to whose rude court was brought the skillful musician who was destined to succeed him on the throne (I Sam. xvi, 15 ff.*). The effect of the music was all that could be desired; for when David played on the harp, "Saul was refreshed, and was well, and the evil spirit departed from him." It may be urged that this is a single instance and without parallel in the Bible. That is true, but we must remember that it is sometimes possible to establish a general usage from a single example. Certainly that is possible here; for the device adopted was no strange prescription just discovered by an expert physician, but the suggestion of Saul's servants, proposing it as a matter of course as soon as the nature of his malady was determined. This remedy is still recognized as of great value in such diseases (Bennett, "Diseases of the Bible," p. 85). Dr. Bennett intimates that Saul's servants may have been physicians; but there is not a shred of evidence to support that hypothesis.

Old Testament Psychotherapy; Suggestion

THE Hebrews were alive to mental effects in overcoming or regulating functions of the body. One of the most interesting cases is found in the late book of Daniel. The King of Babylon appointed Daniel and three other Jews to serve in his court, appointing their food so that they would be "fat and well liking." The Jews objected to the defiling dainties of the court, and desired to live on herbs and water. The steward feared to allow this concession, as his infidelity would be shown in the appearance of the ascetics. But he accepted the plea for a ten-days' experiment. At the end of the test "their countenances appeared fairer, and they were fatter in flesh than all the youths that did eat of the king's

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dainties" (i, 3-15). This could scarcely be explained dietetically, and we have to fall back upon either miracle or suggestion.

The most striking instance of waking suggestion occurs in the life of Saul, in the earliest of the two documents which tell his story. Samuel the prophet suggests that when Saul meets a company of prophets, he will prophesy with them, a suggestion carried out perfectly (I Sam. x, 5-11). Indeed, ever afterwards when Saul came across these roving bands he began to prophesy (ib. xix, 23 f.).

There is another case where this seemingly modern device might be called in as an aid in explanation. At one point in the wilderness journey the people suffered greatly from the bites of "fiery serpents,"* from which "much people of Israel died." Moses prayed for the penitent sufferers, and by divine command set up the famous brazen serpent, and whoever was bitten and looked upon that image recovered (Num. xxi *). Naturally, this has been explained as a miracle by that once large class who valued the Bible chiefly for the miracles that could be found in it or read into it. A more reasonable school of criticism has regarded the story as a legend, largely on the ground of this miraculous element. It is possible, however, to accept the story as historical, without supposing that God once helped men and now lets them go on by themselves. At all events, the story may be adequately explained as a phenomenon in psychotherapy.

Moral Aids in Sickness, Suggesting the Emmanuel Movement

FROM the idea that God was offended when the people sinned, and that sickness was one of his common methods of punishment, it is natural to find emphasis on the curative effects of a moral life. This brings us close to the Emmanuel movement, which lays stress upon the therapeutic value of religion, without denying the proper office of the physician. Job's friends told him that if he would set his heart right, God would relieve him of his pain. Then we have these two beautiful passages in Proverbs, the author of which was surely a wise man:

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"A tranquil heart is the life of the flesh.
But passion is the rottenness of the bones."

—xv. 30.

"A cheerful heart is a good medicine.
But a broken spirit drieth up the bones."

—xvii. 22.

Dr. Macalister sees a "physical reference" in the first passage (Hastings's "Bib. Dict.," p. 326 a); but the heart in Hebrew use is the seat of the intelligence, and the word is actually translated "mind" by Dr. Toy ("Inter. Crit. Com." is loc.) With this we may quote a fine passage in Sirach:

"My son, in thy sickness be not negligent:
But pray unto the Lord, and he shall heal thee.
Put away wrongdoing, and order thy hands aright.
And cleanse thy heart from all manner of sin."

—xxxviii. 9 f.

Appealing to God as the Healer

STILL more marked is the direct appeal to God as the healer of all human woes. The Psalms abound with prayers for health, though in many cases the physical terms may be figurative. Hezekiah turned to the wall and prayed in the time of his great sickness. But fasting seems to have been a more common measure, the fasting being done by the patient's friends. David said that "While the child was yet alive, I fasted and wept: for I said, Who knoweth whether Jehovah will not be gracious to me, that the child may live?" (II Sam. xii. 22). The child lived for seven days after it was stricken, but the record is silent as to any measures for relief except the passionate cries and continual fasting of the stricken father. A psalmist had rendered this office even for those who had become his enemies:

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"But as for me, when they were sick,
My clothing was sackcloth,
With fasting I afflicted myself."

—*Psalm xxxv, 13.*

David stayed the great plague which had devastated the land by offering burnt-offerings and peace-offerings upon the altar he had just built upon the newly purchased threshing floor of Araunah the Jebusite (II Sam. xxiv, 25).

—*L. W. Batten.*

Editor's Summary

Psychotherapy, we learn from this article, played an important part in the cure of disease in the Old Testament. Dr. Batten's account may be summarized as follows:

1. The cure of disease, according to the Old Testament, was carried on by three professions, those of the priest, the physician, and the prophet. The prophet's part was especially important in the history of psychotherapy.

2. The Hebrews in their precautions against disease were guided by principles laid down by the priests as coming from God. Regulations for the prevention of leprosy, and rules for the conduct of daily life, in matters of eating and the like, were among these precautions.

3. Healing was regarded by the Hebrews of the Old Testament as the work of God, as in religious psychotherapy of the present day. External medicines and other physical aids, such as feeding and rest, were also applied to a certain extent.

4. Of psychotherapeutic measures Dr. Batten finds instances in the Old Testament in cheering visits to the sick, in the use of music—as in the case of Saul—and in the employment of suggestion, moral aids, and prayer.

Dr. Batten illustrates cures made by the use of suggestion with Bible narratives, including the account of the setting up of the brazen serpent by Moses to heal his people of the bites of serpents. In the Psalms and in the story of Job he finds emphasis laid especially on the curing powers of a moral life and of prayer.

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42. *Saul Made Well by Music.*—14. But the Spirit of the Lord departed from Saul, and an evil spirit from the Lord troubled him.

15. And Saul's servants said unto him, Behold now, an evil spirit from God troubleth thee.

16. Let our lord now command thy servants, which are before thee, to seek out a man, who is a cunning player on harp: and it shall come to pass, when the evil spirit from God is upon thee, that he shall play with his hand, and thou shalt be well.

23. And it came to pass, when the evil spirit from God was upon Saul, that David took a harp, and played with his hand: so Saul was refreshed, and was well, and the evil spirit departed from him.

—I Sam. xvi.

43. *The Brazen Serpent.*—4. And they journeyed from mount Hor by the way of the Red Sea, to compass the land of Edom; and the soul of the people was much discouraged because of the way.

5. And the people spake against God, and against Moses, Wherefore have ye brought us up out of Egypt to die in the wilderness? for there is no bread, neither is there any water; and our soul loatheth this light bread.

6. And the Lord sent fiery serpents¹ among the people, and they bit the people; and much people of Israel died.

7. Therefore the people came to Moses, and said, We have sinned, for we have spoken against the Lord, and against thee; pray unto the Lord, that he take away the serpents from us. And Moses prayed for the people.

8. And the Lord said unto Moses, Make thee a fiery serpent, and set it upon a pole: and it shall come to pass, that every one that is bitten, when he looketh upon it, shall live.

9. And Moses made a serpent of brass, and put it upon a pole; and it came to pass, that if a serpent had bitten any man, when he beheld the serpent of brass, he lived.

—Num. xxi.

¹There is a discussion about the kind of reptile meant by this term in Bennett's "Diseases of the Bible," p. 132 ff. The author concludes that it was a long, slender red worm which got into the body. There is insufficient evidence to determine this point. For our purpose it is immaterial. According to the story, some of the bites proved fatal.

PSYCHOLOGICAL SECTION

ARTICLE II

Oppenheim on Psychotherapy in Child Training¹

Translated for "Psychotherapy" by Paul Gierasch

PROFESSOR OPPENHEIM has described nervousness as the characteristic ailment of our time, pointing out that no class, age, race, or profession is proof against it. To try to understand its causes and its prevention he considers a pressing duty, he has said, not only of physicians but of thinking persons in general. In the address from which the following translation is made he begins by declaring that it is in the training of children, by the application of psychotherapeutic measures in early life, that the most effective work can be done to combat this evil of the times. It is evident, however, that the grown person can readily gather helpful suggestions and guidance for himself from these words of Professor Oppenheim directed to the training of children. The normal child, he goes on to say, can be fortified against this prevalent danger to his later life, and even the child with an inherited disposition to nervousness may be brought up so as to outgrow its weakness. Abnormal excitability of the feelings Professor Oppenheim pictures as a prolific source of nervous troubles, and the first aim of a training that is to arm against nervousness, he says, should be to cultivate the power to control the emotions and passions. It is to further consideration

¹ From "Nervenleiden und Erziehung," an address delivered before the Psychological Society at Berlin. See note under "The Next Article" on preceding page.

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of this feature of his subject that Professor Oppenheim devotes the paragraphs which follow. Throughout his treatment of the topic he lays stress on the point that a good bringing up, as usually understood, is much the same as that which is required to maintain health of nerves and brain. The views of the physician, he shows, are essentially in accord with the principles upheld by the educator.—*Translator.*

IN my text-book on nervous diseases I have expressed the opinion that it is possible by careful self-training to acquire the power to maintain one's moods—so long as powerful shocks do not come into play—in a kind of middling equilibrium. For this it was necessary, I said, to keep a strict watch over oneself, and to resolve to put in the place of emotions acts of will, in place of clinging sympathy active help, in place of despair liberating action that removes the burden. Especially the feeling of anger is to be throttled in the germ by means of ideas of a contrary sort, which the nervous person should always have in readiness, and by powerful acts of will giving a new direction to the feelings.

The object to be striven for is to acquire the faculty of awakening in oneself, while undergoing strong emotion, ideas which are associated with a different sort of moods, and of carrying out acts which demand reflection. Since strong feelings come as a surprise and check the power of decision and reflection, their very nature makes it follow that struggle and practice are necessary to attain this object.

Teaching Children to Master their Feelings

NOW, while I am of this opinion, indeed, that the mature person can still do much in this direction through self-cultivation, yet, undoubtedly, the chief emphasis must be placed upon the development of this faculty in the years of childhood training.

There is hardly a more mistaken course than that which makes the chief principle of the hygiene of the nervous system consist in

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keeping away from a nervous person everything which might cause an emotional disturbance. A bringing up in the sense of the Buddha or Siddartha legend, which would withdraw even the sight of suffering from the growing youth and would remove him entirely from the sphere of misery and pain of the soul, must incapacitate him for the battle of life, and, above all, render him defenseless against the assaults threatening his nervous system.

How much better is in this respect, for instance, the attitude of Ziehen. Even in the treatment of fully developed nervousness he would intentionally create opportunities for minor emotional outbreaks. Thus he would use a sort of gymnastic of the feelings in order to develop the proper restraining apparatus.

In our opinion the pupil should learn through experience the whole range of unpleasurable sensations, and should thus acquire the ability quickly to master his moods and to permit himself to be stirred only because of great occasion. In other words, he should learn to proportion excitement to the gravity of its cause.

One having in hand the training of a child must not permit pain or grief to settle down in his charge—that is, to gain a permanency not adequate to the nature of the thing that gave rise to it. Above all, he must not permit those forms of hurt feelings that pass as sullenness, bitterness, and their expressions—such as grumbling, pouting, etc.—to flourish. He should encourage the child, too, always to speak out frankly so as to prevent, as far as possible, the transformation of a momentary mental distress into a mood of pain or displeasure.

Curing Children of Fright

LET us consider another phenomenon of this sort that comes within the scope of educational hygiene, abnormal sensitiveness to sudden fright.

This is one of the most constant signs of inherited nervousness, and may be so well developed and rooted so deeply and strongly in the disposition that all efforts to modify it remain fruitless. In

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these cases, too, however, a kind of training may frequently be made effective. It consists of accustoming the child to endure without feelings of distress, and without responding actively, sudden shocks to his senses, especially noises. One advances from mild shocks, which, however, should be sudden, and should find the subject unprepared for them, to others gradually increasing in strength. At the same time stronger shocks are employed also, for which the child is prepared. Naturally, measures are here in question which must be carried out by a physician, or under medical direction.

It is well known that sudden anger, willfulness, obstinacy, etc., make their appearance even in earliest childhood, and cannot be uprooted too soon. If parents allow their children to cry out at the slightest provocation, to fly into a passion, to get red in the face, knot up their fists, etc., it means that they are giving them a bad preparation for the struggle with the emotions. All lulling methods are here to be avoided. An effective means, however, is "intentional neglect." This treatment was recommended by Rousseau, and in our day has had the support of Bruns, Fürstner, and others (especially as applied to hysterical conditions in children). As a rule, it is more effective than threats of physical punishment. I am not of the opinion, however, that one can always refrain from the latter. When other measures of discipline fail, fear of punishment must be made one of the motives which shape the actions of the child. Of course a warning must here be sounded against any excess in the use of this means in the case of nervous children, for in common with others I have seen severe nervous ailments occur in such children in connection with physical punishment.

So, too, the mental torments and nervous troubles that grow out of the distressing sensations of dread, fear of being alone, or of remaining in the dark, fear of thunderstorms, etc., must be attacked at the root by the application of proper principles of education.

One thing, however, I cannot too much emphasize—namely, that all phenomena of the emotional life which are the consequence of an ailment that is already developed—a psychosis, neurosis, or perhaps even an organic brain disease—must be properly recognized

Notes and Collateral Reading

Psychotherapeutic Rules in Child-Training.—In the realm of feeling, the child should be given a horror of all that is bad and false and selfish. By making him conscious of his dependence upon others we must develop in him feelings of social obligation, conscientiousness, and love of the truth. Not selfish insistence upon what he supposes to be his own rights, but regard for the rights of others, should help to cultivate his sense of fairness. The love for the beautiful should also be cultivated in him. Fear must be combated by training to courage and independence, as well as by instruction in the nature of the things he is afraid of; erotic curiosity should be kept away from the child by a sufficiently early explanation of sexual relations; coarse passions must be combated by work and cultivation of the social ideal, by regard for human personality, especially for the weaker sex, and by personal abstinence from intoxicants.

In the sphere of will, which is perhaps the most difficult to influence through education, one should seek to replace moods and caprice by practice in the consistent carrying out of resolutions. In this respect the English are the best teachers: To learn to help one's self in life through fighting and work is the proper maxim for educating the will.

—A. Forel, M.D., "*Hygiene of Nerves and Mind*," G. P. Putnam's Sons, 1907, pp. 287-288.

A Medical Adviser of the Emmanuel Movement on Suggestion in Child-training.—Suggestion in children may be applied unconsciously through the medium of education, or consciously for the cure of some nervous disease or pernicious habit. On account of the plastic nervous system of a child, habits that are once started have a strong influence and become permanent unless treated by suggestion from without. A habit once formed has a tendency to act in the same way as it acted before, only it becomes easier the second time, still easier the third time, until finally the act is done without conscious attention. The nervous system becomes "set," as it were, into this pernicious form, the same as in an old violin whose tones were formed under a master's hand there is a tendency for the wood to vibrate again in an identical manner.

Bad environment acts as a continual pernicious suggestion to the child, which can only be overcome by rigid moral suggestions and training. Children are easily influenced, and are therefore very susceptible to suggestion. On this account only the best influences should be brought to bear on children. Fatigue in children, especially under the pressure of school work, is a prominent factor in producing severe nervous diseases, in diminishing the attention, and therefore making the child less open to suggestive influences. The child should therefore be given plenty of sleep and should not be crowded in its studies.

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Play is a strong factor in the daily lives of children. In children, like all young animals, the play instinct is the healthiest mode of intellectual and motor development.

—Isador H. Coriat, M.D., in *Good Housekeeping*, March, 1908.

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EDITOR'S NOTE.—Dr. Coriat's long and valuable services in the Emmanuel movement give this article by him special significance. Like all who have had similar experience he recognizes the importance of a knowledge of the structure of the nervous system for an understanding of the workings of psychotherapy. We have already had a summary of the conceptions of the nervous system held by up-to-date science. (See the article by Dr. Frederick T. Simpson, in the Physiological Section of No. 1 of the course.) Dr. Coriat's article supplies a description of the principal parts that make up this system. Dr. Coriat first describes the brain and nerves as a whole. He then takes up what Dr. Simpson's article alluded to as the essential factor in the activity of nerves and brain—namely, the nerve cell. Dr. Coriat confines himself to a description of structure only, leaving to the article following his own, by Dr. R. S. Woodworth, the account of the working, or, in other words, the physiology, of these organs.

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the cerebral hemispheres and the medulla, and contains the motor and sensory pathways that come from the hemispheres.

In the pons and medulla are groups of cells or nuclei that constitute the central origin of the majority of the cranial nerves. There are twelve pairs of these nerves, and they all originate from the base of the brain.

The nerves for the special senses (optic, the nerve of sight; olfactory, the nerve of the sense of smell; auditory, the nerve of hearing; glossopharyngeal, the nerve of taste) have extremely complicated nerve endings.

The Spinal Cord and Spinal Nerves

THE spinal cord extends from the lower end of the medulla to the lumbar region. Its length is about seventeen inches, its average diameter three quarters of an inch. In the spinal cord, unlike the brain, the gray matter occupies the center, arranged in an H shape, the tips of which form what are known as the anterior and posterior horns of the spinal cord. The white matter is the external part of the cord, and is composed of fibers from the spinal nerves and from the motor and sensory pathways of the brain.

The spinal nerves originate from nerve cells in the horns of the spinal cord, the motor nerves from the anterior horns, the sensory nerves from the posterior horns. There are thirty-one pairs of these nerves, and they supply various muscles of the body (motor nerves) and also the skin (sensory nerves). All these fibers have their connections and continuations in the cord, through the medulla, pons, and the brain, the motor fibers being descending, the sensory fibers ascending, in direction. The spinal nerves form certain well-defined trunks or plexuses—cervical supplying the head and neck, the brachial supplying the arms, and the lumbar and sacral plexus the lower limbs.

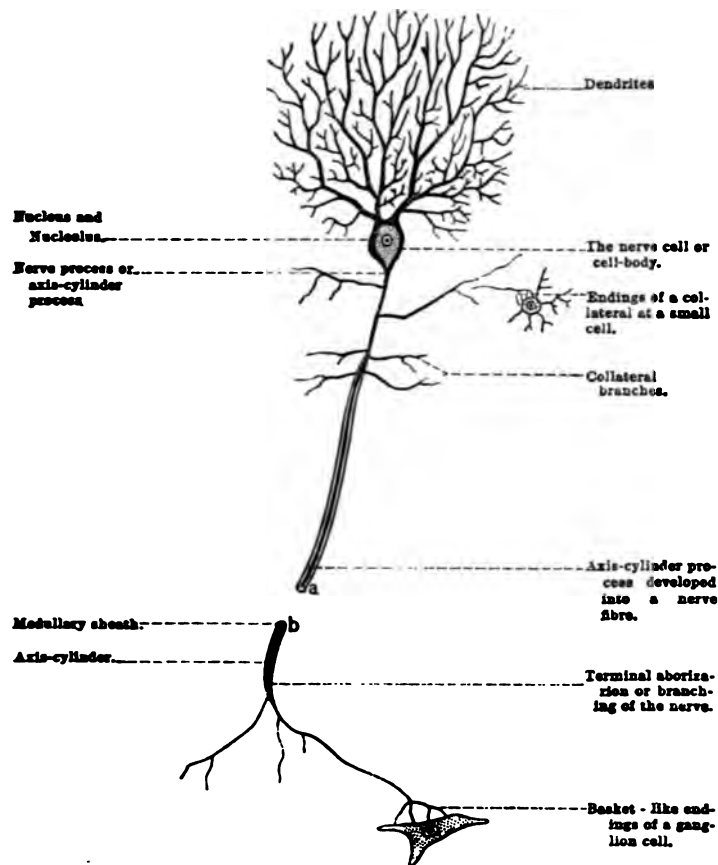
The sympathetic nervous system consists of a series of groups of cells or ganglia, arranged along the anterior surface of the vertebral column.



ANATOMY OF NERVOUS SYSTEM

The Structure of Nerve Cells, or "Neurons"

LIKE all other organs of the body, the nervous system is composed of cells. These cells with their various prolongations are called neurons. They are the units in the construction of the



THE NEURON
(Schematic)

From Forel's "Nervous and Mental Hygiene," by permission of G. P. Putnam's Sons.

nervous system. Nerve cells, or neurons, are found in every portion of the brain and spinal cord. In a general way, they resemble

The Next Article

EDITOR'S NOTE.—How does the mind work? And how can it be used to insure good health of mind and body? Our studies in the anatomy and physiology of the nervous system have the answer to these questions for a goal. The following article by Professor Woodworth—the third of these discussions concerned particularly with the physical machinery of thought and sense—deals with the workings, or functions, of this machinery. Dr. Simpson in No. I of the course gave the broad outlines of modern scientific notions concerning the nervous system. We saw, further, in the article by Dr. Coriat, what are the essential structures employed in nervous and mental activities. Professor Woodworth here tells more in detail how these structures behave. He takes up first the “nerve impulse” and the action of “nerve centers” in general. In a later article Professor Woodworth will conclude his account of the physiology of the nervous system by describing the localization of functions in the brain and spinal cord. Professor Woodworth, although he deals here especially with the physiological side of mental action, is a psychologist of eminence. These two articles, therefore, have been written with a special view to the understanding of another article which he will contribute, which will deal with Psychology, and will present the more strictly mental facts underlying psychotherapeutic practices.



The Physiology of the Nervous System¹—I

By R. S. WOODWORTH, A.B., Ph.D.

Adjunct Professor of Psychology in Columbia University

The Nervous System Grows Out of the Need for Movement

WE are apt to suppose that the chief uses of the nervous system are connected with thought, memory, and the acquisition and utilization of ideas. But when we extend our view from human kind to the whole range of animal life, it appears that the most fundamental use of the nerves is connected with the need for physical movement. The muscles, indeed, directly cause the movements, but the mere possession of muscles would be of no service unless they acted as the circumstances of the moment demanded. An animal utterly insensitive to his surroundings would be doomed to speedy destruction: he would neither flee from imminent danger, nor appropriate the necessities of life when they were within his reach. All animals, however, are more or less sensitive to such influences from their surroundings, as pressure, heat, light, and chemical action. And in all but the lowest animal forms there are special, highly sensitive organs² by means of which external influences are impressed on the animal. But the possession of both sense organs and muscles is not enough. There is also needed some means of communication between these special organs and the muscles, so that when an external influence acts upon a sense organ, some muscle, often in a distant part of the body, may make a fitting response.

¹ See note under "The Next Article" on preceding page.

² The "sense-organs," including the organs of touch, of hearing, seeing, smell, and taste

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This means of communication being afforded by the nerves, the fundamental function of the nervous system may be expressed by the one word *conduction*.

"Conductivity" of Nerves and the "Nerve Impulse"

THE conductivity of the nerves is great: A large mass of muscle can be aroused to action by a slender strand of nerve. The nerve itself, moreover, is composed of many "nerve fibers," and these, in fact, like the single wires in a telephone cable, are the units of conduction. The rate of nerve conduction is rapid, being as high as a hundred feet a second in warm-blooded animals. Although this speed is infinitesimal in comparison with that of electricity along a wire, it is much greater than the speed of conduction in any other form of living matter, and is sufficient to enable the animal to react to a stimulus in a fifth of a second, or even less. The energy consumed by the nerves themselves is almost immeasurably small, and their physical bulk is little.

What it is that passes from the sense organs to the muscles, setting the latter into action, is not certainly known. For want of a better name it is called "nerve impulse." It is not a liquid, as was once supposed. No physical motion nor chemical action can be detected. About all that has been noted is a slight charge of electricity moving along the nerve. The fact that the internal structure of nerve fiber resembles a telegraph cable—in that it consists of an electrically conductive filament (the "axon" or "axis cylinder"¹) surrounded by sheaths of nonconducting or insulating material—has led many modern physiologists to the view that the nerve impulse is essentially electrical. This view is not universally accepted, but it sums up our present knowledge of nerve action better than any other. When a sense organ is stimulated, the nerve impulse is started in the nerve leading from the sense organ, moves along it, and finally, after passing through the so-called "nerve center," reaches the muscles, by way of an outgoing nerve, and

¹ For the construction of the axis cylinder, see page 63 of this number.—Ed.

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excites them to activity, just as a feeble electric current goes from a push-button along a wire to explode a charge of powder.

Principles of Nerve Organization

WITH this understanding of the nerves as an efficient and economical means of communication, and a knowledge of the general principle that there must be a line of communication between the sense organ which receives a certain stimulus and the motor organ which gives the appropriate response, the arrangement of the nerves in the body would seem to be a very simple matter. If we were called upon to install a system of nerves in order that each sensitive point might call up the muscle, always the same, which gave the reaction best suited to the stimulus affecting that particular sensory point, we should probably run a "private wire" of nerve from each sense organ to its appropriate muscle, and our system would consist of a sufficient number of such private wires. Such an installation, however, would be totally different from the nervous system as it actually is. Evidently the nervous system is constituted to meet complex as well as simple requirements.

Instead, then, of simply providing lines of communication between certain sense organs and appropriate muscles, the nerves have the infinitely more complicated task of supplying branching lines of communication, by which one sense organ can influence many motor organs, converging lines by which many sense organs can influence a single muscle, adjustable lines by which stimulus at one point can be led to different motor organs at different times, and some means by which stimuli to various points can be made to give a harmonious result, one stimulus coöperating with another or else suppressing it. All of this could be accomplished only by a *system* of nerves.

The Brain and Spinal Cord the Main Nerve Center

AS a matter of fact, we do not find detached nerves in the body; no nerve leads directly from a sense organ to a muscle, not even from the skin of any part to the muscles lying close beneath;

but all nerves lead either to or from a *center*. This center is not indeed a single point, but a large organ or group of organs—namely, the brain and the spinal cord. All sensory nerves lead into the brain or cord, and all motor nerves receive their stimuli within these organs and lead outward. Within themselves, the brain and the cord are so richly provided with nerve fibers connecting their various parts that they are more properly one center than two or many.

Special Nerve Centers

THERE are, to be sure, smaller special centers¹ within this great center: one in the lower part of the cord connected by nerves with the sense organs and muscles of the legs, and sufficient of itself to carry on local reactions or "reflexes" in the legs; a similar center in the upper part of the cord for the arms; one in the medulla for breathing, and many others. In the simpler reactions such a local center may act alone. Ordinary quiet breathing, for example, is a reflex which calls into play only the sensory nerves of the lungs and the motor nerves to the breathing muscles, together with small portions of the medulla and cord which serve to connect these sensory and motor nerves. But when breathing becomes labored, it calls into play more and more of the centers, until it finally usurps all the motor machinery of the body and interferes with the activity of every part of the brain. And, reversely, the action of the breathing center is immediately affected whenever anything unusual occurs in any part of the body, a sudden sense stimulus, a strong emotion, a difficulty in thought.

The special centers have then a large measure of local independence in simple affairs, but a high degree of interdependence in matters that are more difficult or general.* There is apparently no one arch center, but any one, if its activity becomes great enough, can dominate all the others.

¹ See pages 76-78 of the article by Dr. Simpson, in No. I. of the Course, concerning the independence of the lower nerve centers.—Ed.

* See note at end of article.

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or check the activity of the special centers in the medulla and spinal cord shows us something of the mode of operation of mental influences.

The Nervous System Compared to the Telephone

THIS organization of the nerve centers has often been compared to that of a telephone system in a large town. There are a number of local "centrals," each capable of making connections between its own subscribers without calling on any central outside itself, but each capable also of calling up any other central. The wires leading from the exchange to the individual subscribers correspond to the nerve fibers running from the centers to the sense organs and muscles. The sense organs and muscles are not directly connected, as by private wires, but communication is only through the centers. As the telephone exchange can connect any two subscribers, so the nerve centers sometimes connect a sense organ with one muscle and sometimes with another.

But the analogy must not be pressed too far. The messages all go in one direction, from sense organ to muscle; the muscles never reply, but simply act upon instructions; the messages which pass along the nerves are very simple, being but little more than "Hello!" spoken in various degrees of loudness. On the other hand, the nerve centers have a more complicated task than the telephone exchange, for they must enable one subscriber to talk at once to many, and many to concentrate their communications on one.

The inner working of each exchange, in the nervous system, is apparently automatic, without any operator other than the messages themselves. A message coming in along a certain line goes out most easily along a certain other one, but if it is sufficiently strong it may get command of many outgoing lines. Two incoming lines which have messages for the same outgoing line assist each other in getting control of it, but two incoming nerves which have messages for opposing muscles must compete for control of the center; and when one has held control for a time, its hold weakens, and it gives way to the other. Each center is constantly receiving a multi-

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tude of messages from its own lines and from other centers, but no matter what the conflict, the result is always the sending out of a harmonious set of messages to the muscles controlled by that center.

Structure of Nerve Centers; White and Gray Matter

TO the naked eye the brain and cord appear to be homogeneous in structure, like jelly or blanc mange, except in a slight differing in color from white to gray. But on microscopic examination the white matter shows a composition of minute fibers—like those in the nerves, some very short, others several feet long. When these fibers are traced, some are found to emerge from the centers into nerves, and to lead to sense organs, muscles, or glands, the relation of which to the nervous system is the same as that of muscles.

The great majority of the white-matter fibers, however, do not emerge from the centers, but extend from one part to another within them. It is interesting that the fibers never end in white matter, but always pass into gray, where they break up into finer branches, the branches of one fiber interlacing with those of another into a kind of dense matting. The gray matter consists chiefly of this mat of fibrils and of "nerve cells" or "cell bodies," like little knobs at the ends of the fibers. Usually each fiber has a cell body at one end; although in certain cases it may lie elsewhere along the course of the fiber;¹ and some authorities hold that there are fibers which have no cell body.

¹ The single fiber with its cell body is called a "neuron." On page 61 of this number, in the article by Dr. Coriat, will be found a description of the structure of the neuron. Dr. Coriat, it will be seen, starts his description with the cell body, whereas Dr. Woodworth begins with the nerve fiber (of which the axon or axis cylinder is the essential part). Dr. Coriat speaks of the nerve fiber as an outgrowth of the cell body, because, in the process of growth, the cell body appears first, and the nerve fiber grows out from it; while Dr. Woodworth describes the cell body as an enlargement of the fiber, because in the activity of the neuron, the part played by the fiber is most readily understood, and the cell body appears as an adjunct to the fiber, serving to nourish it. Reference to the illustration of the typical neuron, on page 61, will help to clear up this relationship of the cell body, the nerve fiber, and the dendrites, which together make up the neuron.—Ed.

all the brain synapses are blocked during sleep, so that nothing comes of the stimuli to activity, others think, on the contrary, that all synapses become equally easy of passage, so that every stimulus diffuses gently throughout the brain, and produces no one strong effect.

Coördinating Nerve Fibers

ONE other fact may be gleaned from the microscopic anatomy of the centers, and applied with some probability to their physiology. Many of the fibers have such widespreading dendrites that they interlace with the arborizations of a considerable number of other fibers. This affords a means by which nerve impulses from various sources can converge upon a single fiber, and so excite the same muscle. Again, the arborizations of many fibers spread so widely that they interlace with a large number of the dendrites of other fibers; and this seems to be the means by which a nerve impulse, starting from a small portion of the body, can call into action large masses of muscle.* There are, in particular, many fibers within the centers which are too short to be of much use in connecting distant parts, but which branch so richly that their use is very likely that of collecting nerve impulses from various sensory fibers, or of distributing an impulse to various motor fibers, or perhaps both at once.

It is surmised that there exists within the centers a group of such fibers presiding over each coördinated movement of the limbs; it is supposed that the sensory or inward-conducting fibers transmit their messages to these coördinating fibers, and that they in turn transmit them to properly selected motor or outward-conducting fibers; that different sensory fibers interlacing with the same coördinating fibers reënforce each other's influence; and that some sensory fibers are so connected with the coördinating fibers as to exert an inhibiting instead of an exciting influence on them. Inhibition, however, is more than simple inactivity or rest, and its mechanism is hard to understand, especially as the state of inhibition is followed by a back-swing to exceptional power. It is probable, more-

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over, that coördinating fibers play an important part in the working of the highest brain centers, as well as in governing the motor reactions of the cord.

—R. S. Woodworth.

Editor's Summary

1. Professor Woodworth bases his description of the way the nervous system acts upon the idea that its essential purpose is "conduction." It is, in other words, an arrangement for carrying a message from a sense organ to a muscle. When the proper message reaches the muscle it excites it to action that fits the need of the living being.

2. To meet many varied needs, Professor Woodworth goes on to show, the action of the nervous system is, in fact, carried on by a wonderful modification of this simple plan. The organization of the nervous system provides for combining in a great variety of ways the "nerve impulses," as they come in from many different parts of the body and are sent out to many different parts. There is, too, a selection of the impulses that are to be acted upon and those that are to die away, or "inhibited," as the scientists call it. All this is accomplished in the "nerve centers" by means of the connections of the nerve fibers among themselves. These nerve centers are grouped in the brain and the spinal cord, which together form one great center.

3. The special nerve centers, within the brain and spinal cord, Professor Woodworth shows have a certain amount of independent automatic control over various activities of the body, although they are interrelated and can act together. Professor Woodworth points out that the nerve centers carry on automatically a more complicated business than any telephone exchange, to which he compares their activity.

4. In the nerve centers the nerve fibers interchange messages, combine, select, and coördinate impulses. The nerve fibers here divide into delicate branches or twigs, and the ends of the branches of one fiber touch the tips of those of other fibers. Nerve impulses, physiologists believe, are transferred through these touching branches from fiber to fiber.

5. A typical nerve cell, then, according to this idea, gathers in impulses through a set of these tiny branches (the *dendrites*), passes them along the nerve fiber, and sends them forward, through another set of branches at its farther end (the *arborization* of the nerve cell), to the dendrites of another cell. By means of the many different interconnections of nerve fibers provided by these branches nerve impulses can therefore be directed into many different paths and selected and combined to fit special needs. A single fiber with its branchings, together with the enlargement known as the cell body, makes up the *neuron*, or complete nerve cell (already described in the article by Dr. Coriat).

6. The interlacement of nerve branches in the centers is called the "synapse." To the synapse, therefore, according to the conception here presented, belongs the essential duty of nerve centers. It attends to the adjusting of nerve impulses to the needs of the living being. Professor Woodworth shows that the action of the synapse is subject to many influences, mental and physical, and its proper working is probably the most essential feature of nervous and mental health. It is therefore a mechanism vitally concerned in psychotherapy, which operates through the physical machinery of mind.

Notes and Collateral Reading

[Numbers refer to pages in text]

70. *Local Independence of Special Nerve Centers; the Sympathetic Nerve.*—There is a great amount of muscular tissue in the intestines, glands, and blood vessels, which acts quite mechanically or automatically with a peristaltic or wormlike movement (in the intestines) independent of our will and knowledge. These muscles are controlled by the cells of ganglia scattered throughout the body, especially by the ganglia of the sympathetic nerve, with the fibers of which they constitute other systems of neurons. At the same time, all these ganglionic neurons send out collateral branches of thin fibers sideways to the spinal cord or to the brain, through which branches they receive commands from the upper story (from the brain), as the occasion arises, and also supply it with news. The ganglia in general constitute, so to speak, colonies of lower animals, which vegetate in our body like polyps or jellyfish, and automatically direct the movements of heart, blood vessels, bowels, uterus, etc. Yet they may receive an energetic impulse from the brain by means of the collateral connections, as when we blush or grow pale as the result of some perception or feeling.

—A. Forel, M.D., "*Hygiene of Nerves and Mind*," 1907, p. 54.

75. *The Nerves the Physical Channels through which Psychotherapy Acts.*—It may be said that we know of no way of affecting a human being psychically except through stimuli which excite his afferent nerves, or through stimuli applied directly to his brain. The nerves carry the excitation to the central nervous system, and traversing chains of neurons impinge finally on the neurons of the cerebral cortex. Certain of the excitations here set up correspond to certain sensations, feelings, and ideas. Pure sensations and pure ideas, independent of physical conditions in the cerebrum, physiologists assume do not exist. If this assumption be accepted, then it is obvious that any influence which exerts a psychic effect also produces a physical change in the body, and we can well understand how physical and chemical influences which lead to alterations in the structure and function of the neurons of the pallium may have a profound effect

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on the psyche. In other words, every form of psychotherapy is also a form of physical therapy, and to avoid confusion with spiritualism or other mystical conceptions, it might be better to speak of psychophysical influences and psychophysical therapy than to use the terms in vogue.

—*Journal of the American Medical Association, August 1, 1908.*

76. *The Grouping and Chaining Together of the Neurons.*—It would be hopeless to try to portray in a diagram the arrangement of this practical infinitude of neurons to be affected by happenings inside and outside of the body and to transmit the stimuli here and there so as to make

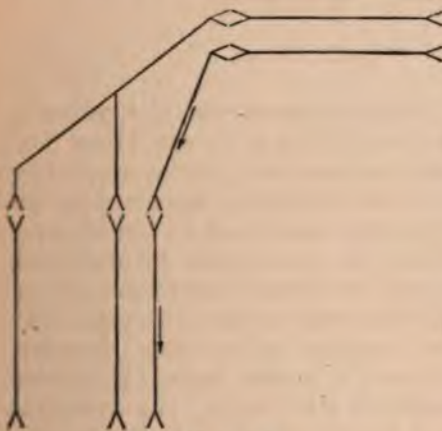


FIG. 44 A

A possible scheme of arrangement of neurons to form an exceedingly simple nervous system.

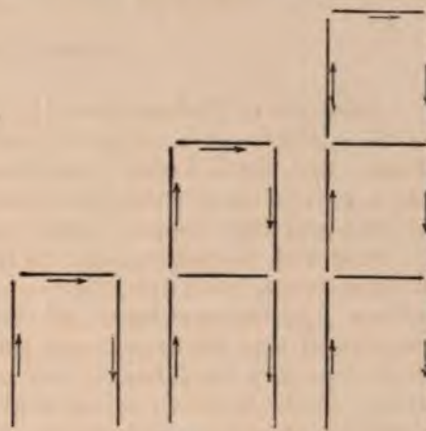


FIG. 44 B

A scheme of arrangement of neurons of varying degrees of complexity. Each line represents one neuron or neuron group.

From "The Elements of Psychology," by E. L. Thorndike

final connections with neurons going out to the muscles. Even if we knew the exact arrangement of each neuron in a man's brain it would take a model as large as St. Paul's Cathedral to make them visible to the naked eye, a model with whose details only years of study would familiarize us. Consider, that counting at the rate of fifty a minute, it would take a man working twelve hours a day over two hundred years to merely count the nerve cells of one man. It is possible, however, to picture the general features of the arrangement.

We can imagine an animal with a nervous system with only two neurons to receive stimuli, only three neurons to discharge into muscles, and only two connecting neurons. Fig. 44 A, may serve as its picture.

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Nervous action in general may be diagrammed as in Fig. 44 B, which shows various degrees of complexity of connections. Even the most complicated nervous systems are variations of this general arrangement of a shorter or a longer series of neurons making a circuit from sensitive surfaces to organs of response. Such a simple circuit is called a Reflex arc or Reflex arch. What would be seen if a perfect model of all the nerve cells were available would be simply a multitude of such arches or circuits of conduction from sensitive parts of the body to muscles and a multitude of circuits cross-connecting these.

—E. L. Thorndike, "*Elements of Psychology*," 1905, p. 151.

The Next Article

EDITOR'S NOTE.—Psychotherapy in the hands of the clergyman is the debatable ground in the discussion of this whole subject. How does the minister of religion justify his practice of healing? The Rev. Mr. Place here presents from the standpoint of personal experience some phases of psychotherapy that illustrate how, in his opinion, it can be used by the minister with propriety and success. The article is one in a series of such reports on current phases of the religious side of the subject of which that by the Rev. Mr. Powell, in No. 1 of the Course, was the first. Mr. Place expresses the belief that psychotherapy from the minister's point of view must be considered largely in the sense of character building. Faults of character, lack of self-control, according to Mr. Place, are often the causes that underlie the nervous troubles which come to the minister's attention. In dealing with character the clergyman, Mr. Place maintains, is doing the work which naturally belongs to him, and is doing it with permanent results in bodily, mental, and spiritual well-being.

CURRENT PROGRESS SECTION

ARTICLE II

The Clergyman's Part in Psychotherapy¹

By REV. CHARLES A. PLACE

Minister of the First Parish Church, Waltham, Mass.

INCE December, 1907, I have carried on work similar to that at Emmanuel Church, Boston. This I undertook by Dr. Worcester's advice, and the advice also of Dr. Richard C. Cabot, of Boston, who has given me much valuable help.

I have conducted Wednesday evening meetings with a well-filled chapel practically every night. These meetings are devotional and educational, and have a value which cannot be measured.

I also receive people for treatment at my house, but without any fee, though contributions for the expenses of the work are taken at the meetings, and in some cases given by the patients. This personal work is entirely private and confidential, approaching at times the sacredness of the confessional. I have the coöperation of an excellent physician, who helps to determine whether the need of the person who consults me is for a physician of the body or of the soul. All kinds of people come to me, representing many religious faiths and walks of life.

Out of this experience have come some very strong convictions. I feel as never before the practical value of the church and of pastoral service. The problem of character and the religious life is clearer. All that I have done in the field is quite worth while in its influence on my general work. But it has a more direct and personal value, and I wish here to testify especially to what seems to me to be the minister's work in this great movement, and his method

¹ See note under "The Next Article" on preceding page.

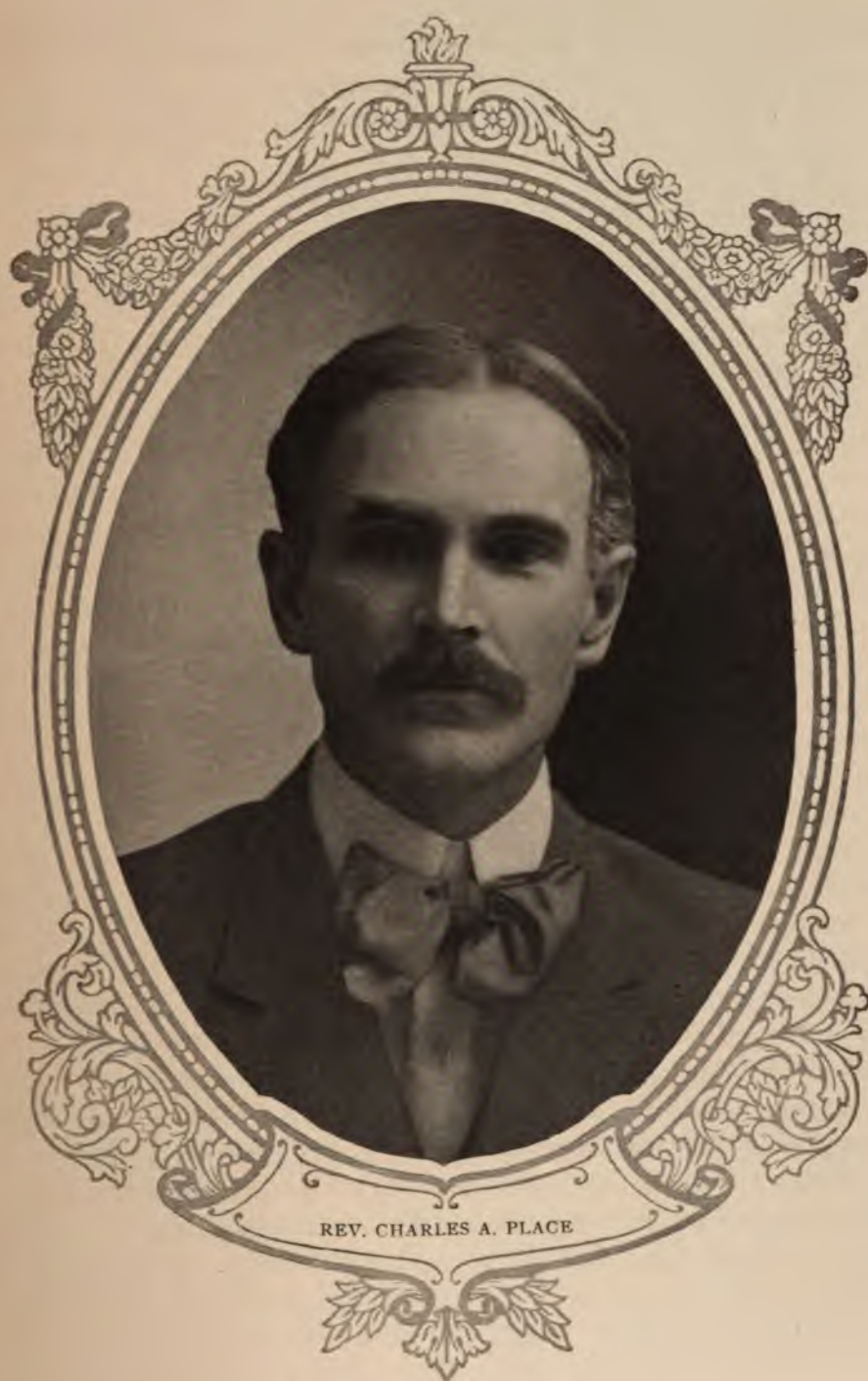
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extreme cases of phobias, or fears, and of fixed ideas. The minister can never hope to deal with such cases as well as the expert physician, and, besides, his proper work begins where they leave off. I am very glad to do all I can for such cases whenever it seems wise. Just at present I have two such cases, which I have continued by the advice of an expert in mental diseases, who has seen the patients and confirmed my method of treatment; yet I feel that all the elements of the problem have not been reached. So far I can report little progress. My moral appeal here has value, but has insufficient effect on the impaired will. Reëducation so far seems to have failed, and suggestion in the technical sense, the specialist tells me, would be of little help. In one case I have been able to overcome the sense of unreality, which here is a symptom, a number of times, but the results are not lasting.

Lack of Self-control the Real Fault

TO what extent these faults of character to which I have referred are due to heredity or are acquired I am unable to determine, but I know the real trouble in these cases is an impairment of the coördinating faculty—that is, there is a lack of self-control. Self-control to me is the key to the whole situation. All the symptoms of functional nervous troubles—weakness of will, weakness of attention, inability, despondency, fear, and so on—point to lack of self-control. To find the faults in character, to educate the will, and to develop the coördinating faculty is a task which strikes at the very root of the whole subject. This is the task I am setting myself.

I want here to say a few words about treatment. It seems to me the conscious and subconscious mind are normally continuous. I therefore have aimed at the whole mind, seeking mastery of self and the total life of the individual. I have used explanation, education, and encouragement, but not suggestion in the technical sense, sleeping or waking. In some cases where the reasoning faculty appeared weak some outside influence or power seemed necessary,



REV. CHARLES A. PLACE

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trance sensation in the other was brought on by a peculiar chain of experiences, which, unchecked, led to disaster.

To Reawaken the Personality to Power, the Clergyman's Task

IN all of these cases there were hereditary or acquired faults of character, especially of judgment and self-control. Here lay the real cause, in the character, as I have already emphasized. What is involved is something more than physical recovery and restoration. The first step is to free a man from the idea that he is a victim of some strange power by showing him the real cause; then the demand is to build up his moral control and confidence in himself. To accomplish this latter, the soul must be awakened to the worth of its own powers and how to use them and led out of all narrowness to a richer life with men and with God. This is the all-important work of the minister, dealing directly with the soul and its sources of strength within and without, and combining sound psychology and sound religion.

To my mind this is the most vital question for the minister of religion in considering this work. Let him deal with what I have called the symptoms or not, as may seem wise or necessary, but the great demand is with their causes—namely, faults in character. A person may inherit a weak nervous system, but that is no excuse for selfishness and ill-will. Weakness of the nervous system alone does not account for all nervous disorders. Experimental psychology and the advancing study of nervous disorders, in my opinion, make ever clearer the demand for the spirit and temper of Jesus in daily life. To accomplish this difficult work of spiritual and mental regeneration there must be a revival of the personal pastoral relation of the minister on the plane of modern life. The minister must really know the human soul from experience, and the springs of character psychologically interpreted, and he must know how to lead the soul out of darkness into the glorious light of an ever-widening life.

—Charles A. Place.

CURRENT PROGRESS SECTION

ARTICLE III

The Society of Emmanuel¹

An Official Statement of the Work and Aims of the
English Society



THE Society of Emmanuel was founded in 1905. Its object was to gather together those who believed the presence of Christ in His Church to involve a power which, so far, has hardly been realized. It seemed clear that Christ Himself had done works of physical healing, and that He had taught men how disease might be destroyed. His words had always implied that it was His Will to assist in ridding those who came into living touch with Him of all disease of body, mind, and spirit.

But it is undoubted that the Church has separated herself from this teaching. The stress laid by theologians upon the virtue of resignation has led the Church to neglect its duty with regard to physical health. It seems strange, of course, that men should not have seen how intimately physical health is bound up with mental and spiritual well-being. We know that the diseased are hindered by evident limitations from contributing in full measure to the mental and spiritual development of mankind; although we know equally well that health does not involve any extraordinary size or strength of body. Now it seems necessary to bring back to the minds of Christians the undoubted fact that Christ taught and worked, under this great ideal, for physical health. To revive this sense of power over disease, within the Church of England, the Society of Emmanuel was founded. The Church is not limited in its interest by its connection with the Church of England, but its immediate surroundings are within the Church as a natural result

¹ See note under "The Next Article" on preceding page.

THE SOCIETY OF EMMANUEL

of the desire to safeguard the central doctrine of the Incarnation. It was felt that extensive work would be accomplished if the society worked from this broad basis.

Officers and Connections of the Society of Emmanuel

THE founder of the society and its President is Mr. J. M. Hickson; the Vice-President is the Right Rev. Bishop Mylne, D.D.; the Hon. Treasurer, Lady Mosley; and its committees include Her Grace, Adeline, Duchess of Bedford, the Countess Beauchamp, the Lady Henry Somerset, Lady Low, Mrs. Edward Trotter, the Rev. G. P. Trevelyan, the Rev. Maurice Bell, the Rev. Darwin Burton, and many others.

It will be seen that this society, with its branches at home * and abroad, has no connection with the movement expressed by the Emmanuel Church at Boston, U. S. A., from which it differs both in theory and method, while sympathizing with its spiritual aims. Our society maintains that the healing, not merely of nervous or functional, but also of organic disease, is within the scope of the Church's office.

It may be remarked also that the Society of Emmanuel is quite distinct in its aims and practices from those societies which depend upon suggestion, or what is called "faith-healing."

Results and Methods

THE Society of Emmanuel has now a secure position. Its work has gained public and authoritative recognition. During the last year, for example, 1,086 treatments have been given to the suffering. The results have been most encouraging. Among the cases successfully treated may be mentioned one of cancer, in which case the specialist called in had given the sufferer only three months to live. By means of the laying on of hands in prayer a complete cure was effected.

Again, there are cases of rupture, rheumatoid arthritis, loco-

* See note at end of article.

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motor ataxia, colitis, and numerous cases affecting more directly the mental, moral, and spiritual nature, in all of which a complete cure was brought about by the same means. In all these cases there is complete evidence as to the disease, and subsequently as to the recovered health of the patient. And these are but a fraction of the actual number of cures.

Here, then, is no theory of what ought to occur, but evidence of what does, in fact, occur. It seems obvious that the power thus expressed is one of supreme value to all men.

So far the actual healing has been done principally by Mr. Hickson, who has given his services free, as do all those who help in the work. The Society of Emmanuel has assisted by united prayer in spreading the influence of his gift of spiritual healing.* Mr. Hickson has found that his own efficiency as an instrument for spiritual healing has increased, and that the results are more certain as the work progresses. Always it is presumed that the source of health is God, and the power that works is Christ. That is to say, although the disease may be what we call "merely" physical or mental, the complete cure and the restoration to active health can only be had from a revivifying of the spirit through Christ. Thus, whatever the method employed in prayer or by anointing, the healing is definitely spiritual.

Mr. Hickson has always felt that he is merely the instrument of a power that is not his. But since this power is Divine and fundamental to all life, there can be no limit assigned to the possibilities of the cures it will effect in the region of faith. Christ's healing alone can touch the whole nature of man's being—physical, mental, moral, and spiritual; and man's capacity to receive—in other words, his faith—is the only limitation to our Lord's work, through those instruments to whom He has intrusted the gift.

The Society of Emmanuel does not remain satisfied with what has been done. A hostel, at which free treatment may be provided, is in course of establishment. Here the work will be certified by qualified medical men; and doctors and clergy will have opportunity to learn to take their part in the work. For this hostel generous gifts have already been made.

THE SOCIETY OF EMMANUEL

Further, there are special meetings of the society, at which papers dealing with spiritual healing are read. The society also has its organ—a monthly publication entitled “The Healer.” And there are periodical conferences for spiritual healers, at which Mr. Hickson hopes to discover and utilize the gifts which so many undoubtedly possess. For if this be, as the society believes, no mere personal power, it exists and can be developed on a scale that may well change the aspect of the world.

Notes and Collateral Reading

[Numbers refer to pages in text]

89. *The Emmanuel Prayer Circle Union.*—In connection with the Society of Emmanuel, “Prayer Circles” have been formed which are kept in touch with one another by the Emmanuel Prayer Circle Union. The official announcement of this Union reads as follows:

“We, then, that are strong ought to bear the infirmities of the weak.”
—Rom. xv, 1.

“The aim of this Union is to form Prayer Circles for intercessory prayer for the sick and needy and for all who help in the work of Healing.

“Prayers for the use of members and cases for intercession and thanksgiving are given each month in *The Healer*.

“The particulars of each case are sent every month to the local secretaries for private use in the Circles, the initials only being published in *The Healer*, under each respective Circle, as a guide to Intercession.”

90. *Archdeacon Wilberforce on Prayer.*—The Society of Emmanuel relies to a great extent upon prayer. In a pamphlet the society illustrates its views on this subject by quoting from Archdeacon Wilberforce as follows:

“How astoundingly we limit the Holy One by our want of faith in intercession for others; for the sick, the sorrowful, the desolate, the dying. It sounds like a paradox, I know, but we actually cramp and fetter and limit the benevolent purposes of the All Father, because in our hearts we do not believe He will answer our petitions.

“The Soul of souls, the Supreme Father-Spirit, is the inmost element within us all. When some common interest deeply moves us, when we are all eagerly desiring the same thing . . . this vital power of the soul seems to be unlocked. What is it? It is the Breath and Will of the

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Infinite. It is not that it is something from us that acts on God: it is something from God that is acting through us, and the united current of purpose goes forth as a dynamic force, and acts directly upon the object for which we are praying.

"When we doubt, when we will not take our full place in God, when we withhold mental concentration, when we ignore the Divine Nature in us, when we just languidly make a request, and then think of something else, we hinder the Divine outflow of spiritual sympathy, this wireless current of God's dynamics; in other words, we limit the Holy One of Israel."

Bibliography

Suggestions for Supplementary Reading

TO those readers who may wish to carry their study of the topics treated in this and the preceding issue of the Course outside these pages the following suggestions for supplementary reading may prove helpful. The books mentioned below are of especial value in throwing light upon some of the more fundamental facts underlying psychotherapy that have been under discussion.

"Hygiene of Nerves and Mind in Health and Disease," by August Forel, M.D., translated from the German by Herbert Austin Aiken, Ph.D., 1907.

"The Psychic Treatment of Nervous Disorders," by Dr. Paul Dubois, translated and edited by Smith Ely Jelliffe, M.D., Ph.D., and William A. White, M.D., 1908.

"Psychology," Volume I, by William James.

"Outlines of Psychology," by Josiah Royce.

"The Elements of Psychology," by Edward Lee Thorndike, 1905.

"Outlines of Psychology," by Harold Höffding, translated by Mary E. Lowndes, 1902.

"The Force of Mind; or the Mental Factor in Medicine," by Alfred T. Schofield, M.D., 1902.

"Psychotherapeutics," by C. Lloyd Tuckey, M.D., 1901.

"The Influence of the Mind on the Body," by Hack Tuke, 1884.

"Fact and Fable in Psychology," by Joseph Jastrow, Ph.D., 1900, pp. 29-38, 171-180.

In connection with the relationship of mind and body which is the basis for psychotherapy these passages are significant:

Forel, Chapter I, "What are Spirit and Mind?" Chapter III, "The Relation of the Mind to the Brain." Dubois, Chapter III, "Rational Basis of Psychotherapy," etc. Lloyd Tuckey, Chapter II, "Power of the Mind Over the Body." Höffding, Chapter II, "Mind and Body."

For the anatomy and physiology of the nervous system involved in psychotherapy, may be mentioned:

Forel, Chapter II, "Anatomy of the Nervous System." Chapter IV, "Physiology of the Nervous System." Thorndike, introductory chapters. James, Vol. I. Lewellys F. Barker, "The Nervous System," Chapter V.

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Religious psychotherapy as exhibited in the Emmanuel movement is described in these two recent books.

"Religion and Medicine," by Drs. Worcester, McComb and Coriat, 1908; "Health and Happiness," by Bishop Samuel Fallows, 1908.

Various popular phases of the movement to utilize psychotherapeutic influences are dealt with in the following articles:

"The New Art of Healing," by Max Eastman, *Atlantic Monthly*, May, 1908; "The Powers of Men," by William James, *American Magazine*, November, 1907; "The Spiritual Unrest," by Ray Stannard Baker, *American Magazine*, December, 1908, January, 1909; "Psychotherapy, with some of its Results," by Beatrice M. Hinkle, M.D., *Journal of the American Medical Association*, May 9, 1908; "New Phases in the Relation of the Church to Health," by Richard C. Cabot, M.D., *Outlook*, February 29, 1908.

Glossary

For terms not found below, see Glossary in the first part of the Course.

Arborization, the branching of a nerve fiber at its end. See illustration, page 61.

Association fibers, nerve fibers that connect different parts of the brain, specifically those which connect parts of one hemisphere of the cerebrum. They are supposed to have to do with mental processes such as perception, conception, and judgment.

Axis cylinder, the central nervous core of a nerve fiber, its essential substance. Applied also to the *axis-cylinder process*, or *axon*, the main process or outgrowth, of a nerve cell. Through it, it is believed, the nerve impulse is carried away from the cell body. See illustration, page 61.

Axon, see *Axis cylinder*.

Basal ganglia, collections of nerve cells at the base of the brain.

Brain stem, that portion of the brain not included in the cerebrum and the cerebellum. It consists chiefly of the pons Varolii and the medulla oblongata.

Cell, the fundamental unit of structure of organized bodies. "The elementary vital unit."—Virchow.

Cell body, in nerve structure, the nerve cell without its outgrowths.

Collaterals, branches leaving the axis-cylinder process of a nerve at right angles. See illustration, page 61.

Corpus callosum, a band of white nerve tissue connecting the hemispheres of the brain.

Cranial nerves, the first twelve pairs of nerves. They originate at the base of the brain and pass through openings in the skull. See illustration, page 58.

Fissure of Sylvius, a well-marked cleft in the cerebrum extending from the base upward and backward, separating the frontal from the temporal lobe.

Fissures, deep furrows in the surface of the brain that involve its entire substance.

Frontal lobe, the lobe or crosswise division of the hemispheres of the brain lying in front.

Glia, see *Neuroglia*.

Lobe, a term applied to poorly defined areas of the cerebrum or forebrain.

Medullary sheath, the white semiliquid covering of the axis cylinder, or core, of a nerve fiber. See illustration, page 61.

GLOSSARY

- Motor cells*, nerve cells which give rise to nerve impulses resulting in motion.
- Motor fibers*, nerve fibers which conduct nerve impulses that result in motion.
- Motor pathways*, groups of nerve fibers which carry from nerve centers nerve impulses that give rise to movements.
- Motor reactions*, responses to a stimulus which result in motion. Those of the spinal cord result in involuntary movements.
- Neurilemma*, the external sheath of a nerve fiber.
- Neuroglia*, the supporting nonnervous tissue of nerves. It forms a dense network in which the true nervous elements are inclosed.
- Neurosis*, "a morbid or diseased condition of the nervous system."—J. M. Baldwin.
- Nuclei*, plural of *nucleus*.
- Nucleus*, (1) the functional and structural center of a cell; (2) a cluster of cells in the central nervous system, as, for instance, at the base of the brain, from which nerve fibers originate.
- Occipital lobe*, the hindmost of the lobes or crosswise divisions of the hemispheres of the brain.
- Organic disease*, disease which changes the structure of an organ.
- Pallium*, the brain mantle, or upper part of the cerebrum. It contains the cortex and is associated with the higher brain activities.
- Parietal lobe*, the lobe or crosswise division of the hemispheres of the brain that lies near the middle and at the side between the frontal and occipital lobes.
- Plexus*, a trunk of interwoven nerve fibers.
- Prophylactic*, preventive of disease.
- Psyche*, the, the mind or soul.
- Psychopathic*, relating to disease of the mind.
- Psychosis*, "an abnormal mental condition correlated with a specific disease process with characteristic origin, course and symptoms."—J. Mark Baldwin.
- Reactions*, responses of a regular sort to stimulation.
- Reflex action*, or *reflex*, a nonvoluntary reaction taking place in the body from stimulation in the brain or other nervous center; illustrated by winking when the eye is threatened.
- Reflex center*, a nerve center which gives rise to involuntary actions in response to stimulation.
- Sense organs*, mechanisms of the body specialized for the reception of the different stimulations of sense. They include the nerve endings in the skin that serve the sense of touch, the taste buds of the tongue, nerve endings in the ear, the nose and the eye.
- Sensory impulses*, nerve impulses coming from sense organs to nerve centers.
- Sensory pathways*, groups of nerve fibers which carry nerve impulses from the organs of sense to nerve centers.
- Spinal nerves*, thirty-one pairs of nerves ending in the spinal cord.
- Stimulus*, that which excites action in a nerve or muscle.
- Subconscious*, "(1) not clearly recognized in a present state of consciousness, yet entering into the development of subsequent states of consciousness. (2) Loosely, the unconscious."—J. M. Baldwin's "Dictionary of Philosophy."
- Sulci*, plural of *sulcus*.
- Sulcus*, a minor furrow in the brain surface.
- Sylvius, Fissure of*. See *Fissure of Sylvius*.
- Synapse*, the interlacement of the branches of nerve fibers.
- Temporal lobe*, the most inferior of the lobes or crosswise divisions of the hemispheres of the brain, lying below the parietal and in front of the occipital lobe.
- Traumatic neuritis*, inflammation of a nerve caused by a blow or other mechanical cause.
- Vagus*, the, or *pneumogastric nerve*, the most extensively distributed of the cranial nerves, carrying branches as far as the lungs, heart, and stomach.

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John H. Sanford - Sept 1909

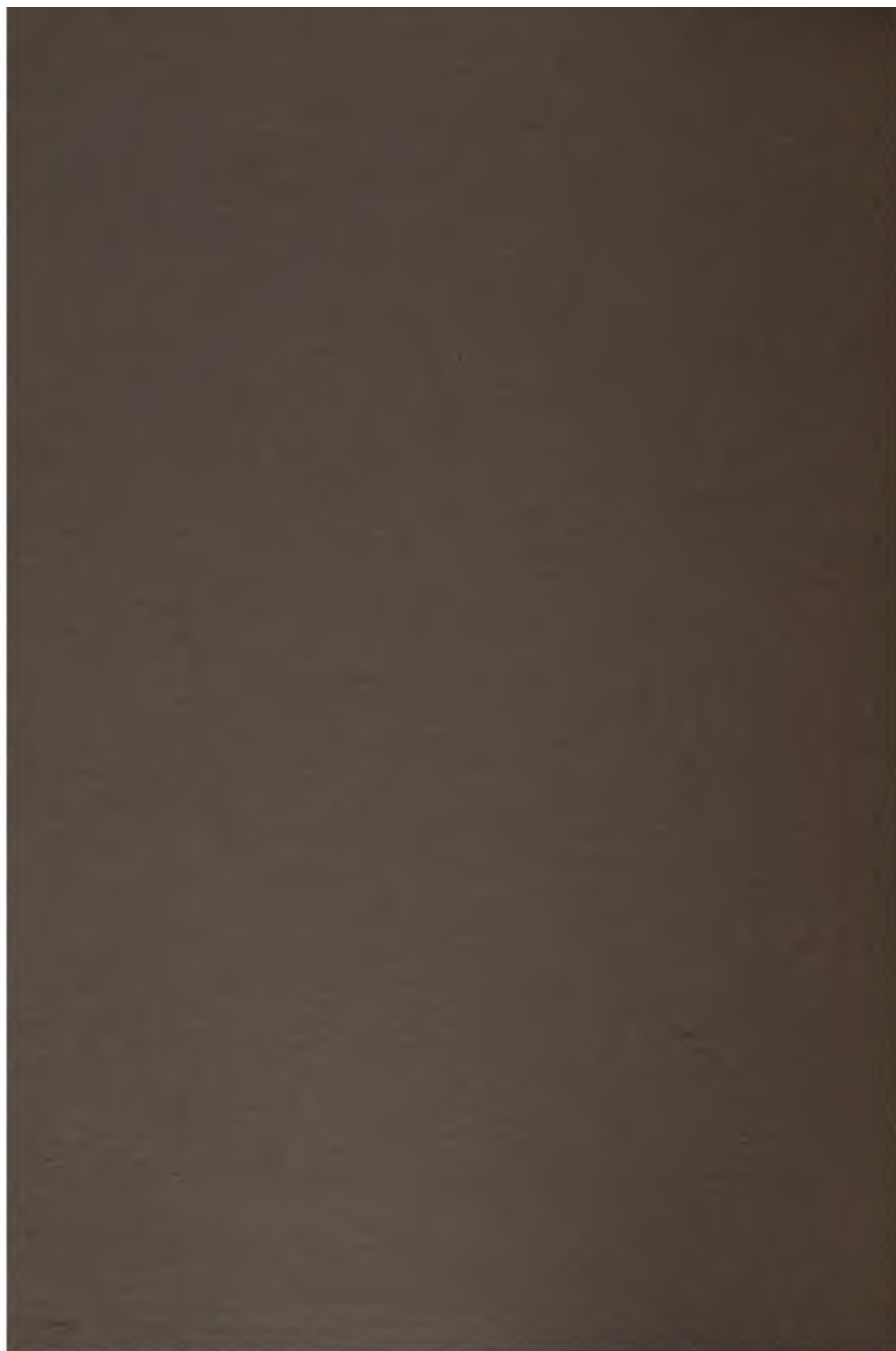
PSYCHOTHERAPY

A COURSE OF READING

VOLUME I—NUMBER 3

"This is the great error of our day
in the treatment of the human
body, that physicians separate
the soul from the body."—Plato.

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PSYCHOTHERAPY

A COURSE OF READING
IN SOUND PSYCHOLOGY, SOUND MEDICINE,
AND SOUND RELIGION



Edited by W.B. Parker

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A NEW DIRECTION TAKEN BY THE EMMANUEL MOVEMENT

NOTHING could be more significant, in the field of psychotherapy, than the recent decision taken by those in charge of the Emmanuel Movement in Boston, who hereafter will work only under the direction of regular physicians. We quote from the *Boston Transcript* of January 28, 1909.

"Complying with the spirit of sincere criticism, the clergy in charge of the Emmanuel Movement has virtually placed its work under the control of the medical profession. With the coöperation of an advisory board of four physicians, rules have been prepared governing the selection of patients for the Emmanuel treatment. These rules are as follows:—

"1. No person shall be received for treatment unless with the approval of and after having been thoroughly examined by his family physician, whose report of the examination shall be filed with the minister's records.

"2. No patient shall be referred for diagnosis or treatment to any specialist or assistant save with the advice and consent of the patient's own physician.

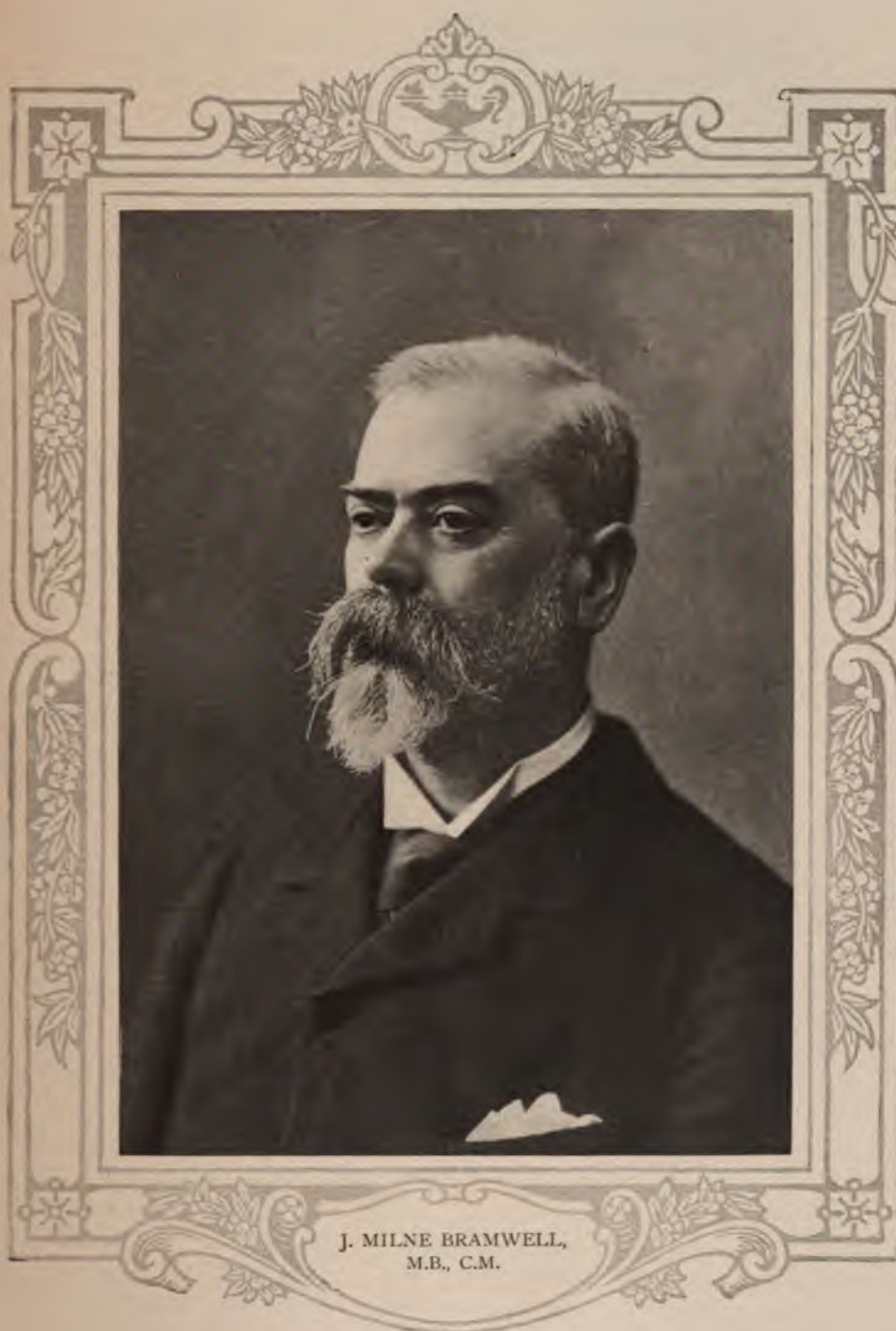
"3. All patients who are not under the care of a physician must choose one and put themselves in his care before they can receive instruction at Emmanuel Church. To those who ask for advice in this choice there shall be handed a printed alphabetical list of all the general practitioners (internists) attached to the visiting and out-patient staffs of the Boston City Hospital, the Carney Hospital, the Homœopathic Hospital, and the Massachusetts General Hospital.

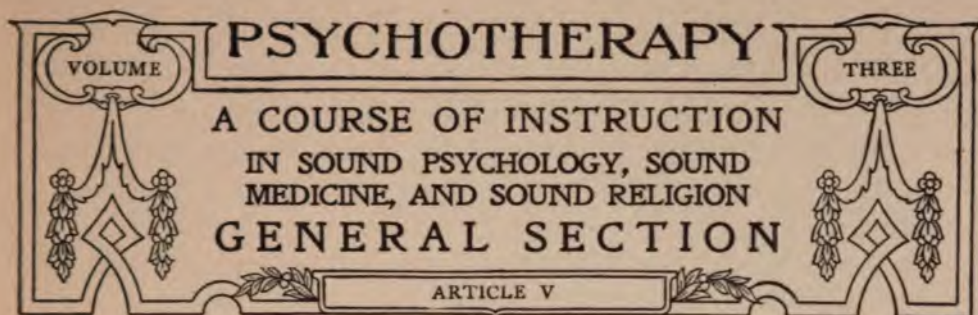
"From this (or from any other source if the patient prefers) a physician is to be selected. Should these physicians decide that none of the patients thus referred to them ought to receive treatment at Emmanuel, none will be treated there.

"Through the operation of rules 1, 2, and 3, it will be seen,' says the statement accompanying the rules, 'that an internist remains throughout in general charge of every case.

"It thus rests wholly with the physicians of this community and not with the Emmanuel clergy to decide whether or not a patient should be referred to a neurologist, or specialist, and which patients, if any, are suitable for treatment by moral and religious reëducation at Emmanuel.

"We believe that under these rules the fundamental object of the movement deserves the support of all physicians and of the community generally."





The Psychology of Health—II

By JAMES JACKSON PUTNAM, M.D.

Professor of Nervous Diseases in Harvard Medical School



OUR civilization is not built so much on those kinds of accomplishments that depend on physical vigor as on mental endurance, emotional balance, imagination, insight, knowledge, and will. We need poets and scientific investigators and artists, rich in imagination, even more than soldiers and backwoodsmen, strong of limb, although not in so great number. But we need also those who can carry on successfully the careers of the hard-working clerk, the heavily weighted statesman, the long-enduring nurse, the night watchman, the mill hand—and, in general, the persons who have demonstrated the immeasurable power of adaptation of the human organism, which can find itself at home not only in extremes of heat and cold, but in the extremes of privation and discomfort.

Finally, we need those sorts of persons who have “won

EDITOR'S NOTE. — A stimulating example and a hopeful picture of the meaning of “health” are supplied by the following article. In the preceding issue of the Course, Dr. Putnam gave a description of health as viewed by the medical psychologist. He took the position that mental health is the chief factor in general health, that the mind, to a large extent, creates well-being,—thus suggesting the great possibilities of psychotherapy. Health was represented as an endurable equilibrium, a relative adjustment of each person to his special surroundings. How this adjustment on its mental side works in actual life, Dr. Putnam illustrates here.

through "severe troubles, or grave anxiety, or tormenting illness, and have gained serenity and something more than resignation; those who, either through personal experience or by the aid of insight and imagination, have realized the typical sorrows of the world, and yet, instead of being overcome by them, have secured tranquillity and even cheerfulness, and have exchanged anxiety for an unconquerable faith. Such persons, even when naturally somewhat feeble, usually secure, through the exercise of prudence, a reasonable share of bodily health — enough, at any rate, to fortify their healthy-mindedness.

They commonly possess a sense of order, a capacity for recognizing beauty even in unexpected quarters, a strong sense of loyalty. They possess also the ability to take sincere pleasure in the happiness of others, and to recognize in the features of the world around them the signs and symbols of a unity and meaning they see in it because they feel it in themselves. Believing in a personal world, they have earned the right to feel a certain kinship with the heroes of fable or of fact in whom some of the personal meanings of the universe have been embodied or idealized. They can understand better than the rest of us the myth of Atlas, who bears the world upon his shoulders, and of Hercules, whose seven great tasks accomplished typify not so much the power of strength as that of patience, of single-mindedness, of reason, of service, of faith. To say this is to hint at the fact that the persons whom I have in mind — among whom many heroes of invalidism are to be found — are persons of religious sense, whatever creed they may profess, and that many of them have gained through their experience a training which enables them to understand the best philosophy.

Helen Keller is a remarkable case in point, for although she is obviously a person of unusual natural intelligence, ability, and insight, there can be little doubt that the limitations imposed upon her by her blindness and her deafness helped to impress on her the huge practical importance of a line of thought, which others perhaps acknowledge, but often without appreciating its significance. No one can read the glowing narrative¹ in which she has recently

¹ "Sense and Sensibility," Helen Keller, *The Century Magazine*, Feb.-March, 1908.

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described the growth of her mental vision without feeling convinced that it means mental health, and that physical health would be likely to follow in its train. The impression given by the account of her experiences must have been felt by many persons who would be surprised to learn that in acquiescing in her reasoning they were acknowledging the validity of a profound philosophical argument. Let this serve as an excuse for a brief restatement of her views.

Mind as the Creator of Helen Keller's World

IT had been said that allusions to beautiful scenery and the like ought to be omitted from the reading matter of the blind, because they "serve to emphasize the blind man's sense of his affliction." But Miss Keller's observation has taught her otherwise. Determined to realize so far as she was able the full richness of the world around her, she has utilized her very limitations as a stimulus to her imagination and her insight, and has found the "hazardous game" of constructing the sight and sound world, by the aid of analogy and fancy, to make up "half the delight, the frolic, of daily life." She describes the history of this construction; and it is full of suggestiveness even for those whose limitations are of other sorts than hers.

Her progress was far more than a journey by guess-work from the world of touch to that of sound and sight; it was a journey from the sense world to the richer world of the discerning mind. But how does the mind get to be "discerning"? Does it owe its power of reading beauty, order, strength, into the panorama of the world solely to the education of the senses, or does it bring something, without which the education of the senses would be unavailing? In seeking an answer to this question she reaches, doubtless with the aid of friends and books, conclusions of immense significance for life and mental health. They are practically a restatement in words more easily understood of Immanuel Kant's* proposition that there are certain terms or forms in which the mind, by its innate nature, can and must think.*

* See note at end of article.

In describing her emergence from the sort of formless void that marked her earlier mental life, she says that the critical moment came when, instead of simply passing without conscious thought from one sensation to another (as when she "thought only of objects, and only objects [she] wanted"), she began to conceive "herself" as a thinking person. "Thus it was not the sense of touch that first brought me knowledge. It was the awakening of my soul that first rendered my senses their value, their cognizance of objects, names, qualities, and properties. Thought made me conscious of love, joy, and all the emotions, . . . and the blind impetus which had before driven me hither and thither at the dictates of my sensations, vanished forever. . . . As I read and study, I find that this is what the rest of the race has done. Man looks within himself, and in time finds the measure and the meaning of the universe."

It may be imagined that the transition was an easy one from this point to that of utilizing the preëxisting capacity of her mind to think in those forms which by most persons are rendered outwardly as visual images. Must not every one's reason move quickly and sympathetically forward to meet the closing sentences of her fine and deep essay!—"Thus mind itself compels us to acknowledge that we are in a world of intellectual order, beauty, and harmony. The essences or absolutes of these ideas necessarily dispel their opposites, which belong with evil, disorder, and discord. . . . Reality, of which visible things are the symbols, shines before my mind. While I walk about my chamber with unsteady steps, my spirit sweeps skyward on eagle wings, and looks out with unquenchable vision upon the world of eternal beauty."

If this reasoning is correct, then the old principle,* enunciated so often as to be considered incontrovertible, that "the mind contains nothing that did not reach it through the senses," is incorrect. In fact, it is related that some one to whom this proposition was quoted answered simply: "Nothing but *mind*." It may be true that these preëxisting qualities or attributes of the mind have to find expression in the terms of a certain special sense or act before they can be communicated to another person in an exact form; but

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these expressions would never find a useful place, would never even be understood, were it not that they indicate a rational meaning present to both minds.

It would be a poor recognition of Miss Keller's story of her discovery of herself, of her escape from bondage, of the restoration of her mental vision, to see in it only a narrative of adventure and achievement rarely to be repeated; nothing but a subject for an hour's wonder and admiration, like the escape of Houdini from his knots. Her remarkable history seems to me a great parable, almost deserving of a place alongside of the old mind myths, of which the interest is commensurate with human needs and passions and longings for deeper insight into the mysteries of the universe. Looked at in this way, her experience can be paralleled by those of others that seem at first sight different.

Mind as the Re-creator of the Invalid's World

LET us suppose the familiar case of a person burdened by a few common limitations, and passing, on the ordinary journey of existence, through the usual routine of school and college, professional career, religious observances, and social life. Hampered by lack of physical vigor, let us say, he begins early to draw comparisons, unfavorable to himself, between his power of accomplishment and that of others, and becomes "sensitive," inclined to hold himself aloof, and to find a fascination in daydreams and observances tending to accentuate his "self-conscious" traits. His religious training, strict and exalted, but conventional and narrow, leads him to regard himself as sinful, and even to act, in small ways, as if to carry that conception out. Impressed with his liability to failure, he learns to balk at every task, and to exchange his normal fears for a vague sense of terror. The people whom he meets seem to look on him with a certain coldness and suspicion, and the rigid conventions of society appear to make demands upon him which he struggles more or less in vain to satisfy. Yet all this time the feelings that torment him are kept half concealed, even from himself, and he counts among his friends as "normal." He desires to make himself of

use, but suffers profoundly from the dread of breaking through the social rules of conduct, and rarely feels himself as "free" even when forced to make decisions. Ill health follows, and he passes through times of nervous breakdown.

But at last, at a certain period, perhaps toward the close of adolescence, our supposed invalid—needlessly an invalid—is fortunate enough to make the acquaintance of a friend through whom the ferment of a better logic and more accurate observation finds its way into his mind. From then on the world around him gradually assumes a different aspect. He had not been without the bare possession of his senses, but he finds that they had played him false. Instead of illuminating the best chambers of his mind, they had illuminated the less good. He discovers, one by one, the illusions and delusions in the midst of which his existence had been spent.

The Healthy Mind Finds Order in Itself

IF of reflective turn of mind, he may take pleasure in noting that while the reconstruction of his world takes on a variety of forms, corresponding to the variety of his interests, each form has more meaning than it ever had before for him, and a certain bond of relationship runs through them all. If he is of musical taste, he finds a greater unity of sense and purpose in the works of his favorite composers, while at the same time they stir his own feelings more widely and deeply than they previously had done. The society of his friends affords more real companionship than formerly, and he recognizes better the purposes of their several lives. Finally, he surmises that this universal increase in meaning of his various experiences refers back, each time, to an increased or newly discovered sense of meaning and order, existing as a quality of his own mind, symbolizable in an infinite variety of ways; and he learns to consider this mental quality as innate, because he observes no influence within his own experience through which it could have been created.

Gifted with this growing power of reading varied meanings, he feels himself like a person looking at a landscape, now from

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near at hand, when men and farms and marts of industry form the impressive feature, now from a remoter point, when masses of color and hazy distances appeal to the poetical imagination. Discovering thus how the same elements combine to produce such different effects, he learns more and more to see analogies and relationships between objects of sense impression and of intellectual or moral interest, and observes how his own past experiences interweave themselves, like colored threads, with the great warp of mental insight.

Experiences of this sort parallel Miss Keller's history, each throwing light upon the other.

The Value for Health of Realizing this "Ideal" Order

I MUST refer the reader to a later paper of this Course for a further discussion, from a more practical standpoint, of the outcome of healthy-mindedness, and the therapeutic usefulness of what may be called *ideals*, but could more appropriately be designated as *realities*, such as I have referred to in this article. I am here concerned mainly with the laying down of certain general principles, and with the enforcement of the view that while biology and physics are to a great extent matters of common knowledge, the arguments here suggested are usually left to the consideration of special students, notwithstanding the fact that they have much to do with the rational basis of religion, for which, at the present day, so many people long.

More important than grasping such an argument is to be grasped by it. When this stage is reached, one may fairly hope that what begins as an effort of intelligence will give place to an easy and pleasurable movement of the mind upon a lofty plane, as in Miss Keller's case. But even before this stage is reached it is fortunately possible to find oneself carried away by the enthusiasm of rational conviction; and this is a form of enthusiasm highly conducive to the mental health, and so also to the bodily health. Many of the essays of Emerson — as, for

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full professor there in 1770. This post he held throughout his life. He died February 12, 1804. His principal works are: "The Critique of Pure Reason" (1781), "Metaphysic of Morals" (1785), "Critique of Practical Reason" (1788), "Critique of Judgment" (1790). "The Critique of Pure Reason" has been called the "Doomsday Book" of German philosophy, and it may be said to be the most important single work in the whole history of modern philosophy.

7. *The Mind Must Think in Certain Terms or Forms.*—This was the epoch-making thought by which Kant transformed modern philosophy; the thought on which modern philosophy is based. For a clear understanding of this great principle the reader cannot do better than go carefully through the whole chapter on Kant in Royce's "Spirit of Modern Philosophy," from which a short extract follows:

"Our world seems to be in space and time because it is our own nature to view it as spatial and temporal. Space and time appear to us to belong outside of us, merely because they are conditions in us of our seeing and feeling things, forms of our sense. It is with them as with colored spectacles. If one always wore green goggles, all his world would seem green to him. . . . In so far as the world is seen by us in our sense forms of space and time, it is bound to appear to us as conformable to their laws. . . . Well, even so, when we *think* of natural events, there are certain conditions governing our thinking process. And to these conditions the products of our thought, the objects of our experience, must needs conform. . . .

To state the case, finally, in a general formula: The unknown things in themselves give us sense experiences. These we first perceive in the forms of space and time, because that is our way of perceiving. Then, being coherent creatures, we order this, our world of sense, according to the laws of causation and the other "categories" which are forms of thought. Thus we are alike, yet in a world which, while it is in all its sanity and order an inner world, is still for each of us apparently an outer world, a world of fact, a world of life. The unity of our personality demands the unity of our experience; this demands that our show world of nature should conform to the laws of thought; and thus causality, necessity, and all the other categories of the understanding are realized in the world through our constructive imagination, which, working in the service of the understanding, actively puts them into the world."

8. *The Mind Contains Nothing that did not Reach it Through the Senses.*—John Locke, in "An Essay Concerning Human Understanding," appropriated for his own use the scholastic principle quoted by Professor

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Putnam in the text. The philosopher Leibnitz added "except the mind itself." *Nihil est intellectu quod non fuerit in sensu — nisi intellectus ipse* (Leibnitz, *Nouveaux Essais*, ii, 1, 2).

The Next Article

EDITOR'S NOTE. — There is something startling to the lay mind in the newer conceptions of sickness that medical science advances in connection with psychotherapy. Dr. Cabot in the following article pictures these newer ideas that are doing away with the conventional distinctions of "mind" and "body," and the "mental" and "physical" nature of disease. Stripped of these older, outworn notions, which many of us not abreast of recent scientific thought probably still hold, the life of body and mind, in health or disease, is revealed as an undivided life. How significant for psychotherapy is this circle of activities! It permits of mental influences entering at any point, Dr. Cabot shows, to rebuild, to strengthen, and to heal, and this, too, in a sense so vital that their place by the side of physical means and medicines is one of convincing reality and power. The article throws light, too, upon the meaning of the expressions "functional" and "organic" which have figured so prominently in recent discussions of the Emmanuel Movement. It supplies a new definition of these terms. In this article the principles set forth in the contributions by Dr. Putnam on the Psychology of Health receive additional illustration. It is to Dr. Putnam's theories of health and disease that Dr. Cabot here points as lying at the foundation of the views he himself puts forth.



Team Work of Body and Soul¹

By RICHARD C. CABOT, M.D.

Assistant Professor of Medicine in Harvard Medical School

IN the first paper of this series I tried to show that the American type of psychotherapy can reasonably hope for success and a certain degree of originality by taking a catholic view of the various methods, by refusing to pin its faith to any one system, and by trying to combine in its own way the better points of many systems. Too often one teacher works wholly by suggestion, another by education, a third chiefly through the good offices and influences of healthy work, while a fourth doggedly maintains that the mental symptoms of functional disorders, such as nervous prostration, hysteria, and the rest, are best combated by physical means, such as baths, massage, electricity, diet, and rest. It is our business in America, it seems to me, to attempt rationally to combine these and other methods.

In this paper I want to point out how we may avoid being led astray by any catch-words or theories regarding the supposed "physical" or "mental" origin of functional or of organic disease.

I read not long ago a review² of Dr. Worcester's book — "Religion and Medicine" — in which the efficacy of the Emmanuel type of psychotherapy is called into question because the reviewer doubts whether neurasthenia and psychasthenia are always of psychical origin and suggests that they may be the result of fatigue or of poisoning ("auto-intoxication").

¹ See note, "The Next Article," on preceding page.

² *Boston Medical and Surgical Journal*, Sept. 3, 1908.

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This leads us at once into the thickest of the tangle of opinion, theory, and conjecture regarding the classification of diseases. We may say that there are at present three types of opinion regarding the nature of the so-called "functional neuroses," such as nervous prostration, nervous dyspepsia, and hysteria. One group following the lead of Professor Pierre Janet of Paris, Professor Dubois* of Berne, and Professor Morton Prince of Boston assume that they are wholly of mental origin, and conclude that their treatment should be wholly psychic and moral. At the other extreme comes the Philadelphia school, a group of physicians influenced by views supposed to emanate from Dr. S. Weir Mitchell of Philadelphia. These experts insist that physical methods—such as rest, over-feeding, and massage—are the main factors in the cure of functional or nervous disorders, because they believe that these disorders are fundamentally "physical" and are due in fact to fatigue, strain, and their effects.

Every Disease Represents a Vicious Circle

BOTH of these types of opinion seem to me to err in that they suppose that disease has a single cause, physical, chemical, or mental. The sounder view, it seems to me, is that represented by a third group of physicians of whom Dr. James J. Putnam is a brilliant example; physicians whose beliefs I shall now try to explain.

Modern research in physiology and pathology has shown that disease is rarely confined to a single organ or part. It rarely has a local habitation. A bullet lodged in the tissues is a source of disease only when it excites inflammation or poisoning which spreads by the blood and lymph currents to all parts of the body. If its influence did not spread in this way, there would be no disease; the bullet would be harmlessly isolated, like Napoleon at St. Helena.

Disease is not a germ or a poison. It is the revolution excited in the whole body by a germ, a poison, or a hemorrhage. Fever,

* See note at end of article.

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weakness, delirium are examples of what the germ or poison may compel the body to do in self-defense—a self-defense often woefully misdirected and ineffective.

When disease has been established in a body, it maintains itself by means of what I have called *a vicious or self-corroding circle*.

In organic heart disease, for example, we find that weakness of the cardiac muscle leads to slowing of the blood stream through the arteries and veins; this stagnation of blood leads in turn to dropsy and congestion of the lungs, the liver, the kidneys and other organs. The increased resistance to the entrance of blood which is caused by the pressure of the dropsical fluid in these organs still further embarrasses the heart and adds to its burden. The heart is thus still further weakened and the stagnation again increased. But the ill effects of stagnation appear also in the brain, and thereby the patient becomes apprehensive, or perhaps delirious. These mental states again still further aggravate the heart trouble,—and so we go from point to point in the vicious circle.

It becomes more and more difficult to locate any disease in a particular organ, or to answer satisfactorily Virchow's epoch-making question — "*Ubi est morbus?*" (Where is the disease?). The disease is everywhere, although it may have started at some one point and produced its worst mischief in some single organ. In an ordinary case of heart disease we find the patient suffering from symptoms referable not only to the heart itself, but far more largely to the lungs, the liver, the kidneys, the brain, and the loose tissues beneath the skin.

The practical importance of realizing this depends upon the well-established fact that we can break into this vicious circle at any point, and not merely at its supposed starting point. We may ease the patient by working upon his kidneys, upon his liver, or by drawing off dropsical accumulations of fluid from his chest or his abdomen. Thus by breaking the circle at one point, we may cause the whole vicious structure to fall apart. The relief given through the kidneys, or through tapping a dropsy, may enable

the heart to get a grip of itself, so to speak, to recover its balance and resume its proper functions.

In the example just given—heart disease—the part played by the mind, either for good or harm, is always clear but is rarely great. Let us take an example in which mental influence makes more difference. Consumption is of course a disease of the lungs, yet many a consumptive has won back his health because he had a good stomach, a good digestion, and was able to take and absorb the extra nourishment necessary to fight off the disease process in his lungs. Other patients, whose stomachs are less ostrich-like, may yet win their hard fight against the disease because they have so much “backbone.” Nowhere does character tell more strikingly than in the fight against consumption. The patient who can avoid depression and keep up his spirits finds it much easier to keep up his appetite, and so his nutrition, and so the germ-killing activity of his tissues (“*vis medicatrix naturae*”). The patient who has the determination to carry out a boresome or repulsive régime—loafing day after day on his back in a dreary sanitarium, and cramming down the food for which he has no desire—will win back his life; while another patient, with an equal amount of disease, may die from want of faithfulness and stick-to-it-iveness under the same discouraging conditions. No reasonable man to-day believes that consumption is caused by mental states, or cured by them; but any one who has seen much consumption knows that, like every other disease, it is a vicious circle wherein not only the perverted action of various organs, but the activities of mind and spirit, play a part.

Health is a Self-maintaining Circle

NOW, since all sorts of forces, psychical and non-psychical, take part in the vicious circle which we call disease, just so the state which we call health is best conceived as a self-maintaining system, like the planets; a system in which each member supports and is supported by the rest. *Disease may thus be defined as a self-corroding circle, and health as a self-maintaining circle.* In this

ism), we cannot be content to speak of the disease either as organic or as functional, if we define these words as I have suggested above.

I wish, therefore, to suggest another definition, which is based upon the new conception of disease as a vicious circle, and of its cure as a successful breaking of that circle at some point. Let us say that by *Functional Disease* we will mean all maladies in which experience shows that we can successfully break in at the psychical gate; while by *Organic Diseases* we will mean those in which we find this gate most obstinately closed.

Diseases which experience shows to be curable in part by physical, in part by psychical, means will then be said to contain both organic and functional elements. Such mixed conditions make up in fact the majority of cases of disease as physicians see them.

The conception of health and of disease just described should tend to prevent our thinking or acting as if a small part of the patient (his "body" or his "mind") were the whole.

An overemphasis on this distinction between the facts we call "body" and the facts we call "mind" has led us and still leads us into many mistakes. For example, the fundamental error of confusing health with muscular strength and trying to get strong by pulling chest weights, rests on the fallacy that you can fortify "the body" without engaging or interesting "the mind." The very title "physical training," so often seen in school and college catalogues, rests on a false distinction. The *man*, not his "body" or his "mind," is what we want to train. In order that we may avoid some of these mistakes, let us examine this distinction more carefully.

The lines dividing "mind" and "body" are at their clearest in torpor or disease, — but become barely visible in healthy activity.

Does a man sing with his soul or his body? Is painting psychical or physical? Is love wholly spiritual or wholly corporeal? The true answer seems to me to be that good singing, good painting, love that has the richest compass, cuts sharply across these distinctions and tends to destroy them. It is in the half-

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dead states that we appear like disembodied souls or soulless automata. Health sweeps all our powers to a focus, as a fire sweeps its own materials into its draught. A person half asleep, a degenerate, or a convalescent, may think without action or act as thoughtlessly as a vegetable. Then those distinguishable elements — “body” and “mind,” plan and fulfillment — become not only distinguishable but distinct, falling apart like the loose fingers of a listless hand or the rotting fibers of an ancient tree.

Disease loosens, health tightens, the fabric in which those strands we call mind and body are interwoven. The man alive to his finger tips, whether in football, speech, or song, makes and suggests no such division of his life. It is the invalid who cracks apart.

Man a Group of Interests: Mind and Body Interwoven

THESE shop-worn conventional conceptions — “body” and “mind” — show the erosion and disintegration of time in still another way. They force us to regard the human being as a combination of two elements. But why only two? The healthy man is (not has) a group of interests, each of which interests involves a marriage of plan (“mind”) and fulfillment (“body”). It is quite forced and untrue to split each of these interests into halves and try to compel all the divorced plans to live in one house, called “mind,” while the unnaturally disarticulated embodiments are huddled together outside. Yet that is what we do when we speak of “mens sana in corpore sano,” or when we work for “physical” training in education, or when we treat a patient by purely physical or purely psychical methods. A group of mutually supporting interests, a circle whose members hold each other up, a team with each member in his place, — these are the figures of speech applicable to the healthy human being, the healthy family, town, or nation. I shall have to go into some rather trivial details to make my meaning clear at this point.

Call up the memory of some preëminently sound and vigorous person, and see if it is not true to think of him in this way. His life represents perhaps an interest in woodcraft, in architecture, in

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music, and in his family. Into each of these portions of his life goes strength and energy and skill, intelligence, inventiveness, imagination, and reverence. In the woods he handles his ax, his paddle, and his coffeepot in his own individual way. (No mere bodily or mere mental activity here.) He makes new and characteristic combinations in his paddle strokes and in his frying pan. His line of march each day and his camp at night express his own habits, tastes, and scruples. "Body" and "mind" are lost sight of in perfect team play of thought, imagination, eye, ear, hand, and foot. Creative and guiding intelligence is at work in every muscle, *but the intelligence itself is also created and guided from moment to moment by the muscles.* The plan finds outlet in action,—the action reshapes the plan; and in this ceaseless interchange and coöperation, the whole man finds his expression, his education, his refreshment, and his health.

I have tried to recall to your minds how all the elements of a wide-awake human being enter into "team work" to fulfill a single interest. But this interest is itself a member of a larger team. This life in the woods reënforces and is reënforced by the interests of his home life, his professional life, and his music. Into each goes his ingenuity, his manual skill, his sanity, and his aspiration. There is no checking of plans at their bodiless outset,—no day-dreaming of impractical ideals. For that would be disease, a morbid separation of the thought from action, of soul from body. But, on the other hand, there is no stereotyped, automatic working, no uncontrolled eruption of muscles and appetites.

Education in Health should aim at the Whole Man

NOW my present interest in recalling these familiar facts is to pave the way for the assertion that the cure of disease should aim invariably to further the establishment and self-maintenance of such a group of interests,—not in the separate cultivation of body and mind, far less in the special care for single organs, like the stomach, the muscles, or the brain.

To get the whole man agoing, to get the anchor weighed

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and some cruise undertaken, to get back to the real, that is, the undivided life, — which consists in doing something worth doing because we want to do it, and in bringing into this interest the subordinated activities of brain, heart, lungs, muscles, and every other member of the team, — that is the goal for which every form of therapeutics and education must aim. Psychotherapeutics is one way of breaking into a vicious circle. Drug therapeutics is another. But why do we break in at all? To cure the mind? To soothe the stomach? Certainly not. It is to reorganize the team and get it working so smoothly that no one will note or distinguish either "mind" or "stomach" in it. Every one knows that it is quite unnatural to be conscious of our heart beats or our stomach movements; but I hold that it is just as unnatural to dwell upon the workings of our wills or our emotions. The healthy man never says, "Now I will exert my will," any more than he says, "Now I will contract my muscles." He guides the act — that is all. No more does he say (with Professor Münsterberg¹), "To-night I will uncork my emotions and repress my intelligence." He has a certain job to do, a certain friendship to maintain and develop, a certain speech to make. Into that, so far as he can, he puts the whole of himself: bones, muscles, circulatory, respiratory, digestive and sexual energy, skill, imagination, watchfulness, determination, — all are present, all are unconscious, — fused into intelligent action.

The Causes of Diseases not Single

THE abuse of the word and idea of *cause* has done incalculable harm in international politics, in theology, and in science. In this paper I am especially interested in the harm wrought by it in the study and treatment of disease; and I refer particularly to the habit of looking for a single cause or motive for the doings and sufferings, the excesses or shortcomings, of some person whose affairs we are trying to mend.

¹ *McClure's Magazine*, October, 1908.

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back stroke on some unnoticed point, because all our attention is elsewhere.

I have endeavored to set forth three consequences of regarding a human body as a team of coöperating members, which conspire for self-maintenance in health, and conspire for self-destruction in disease:

1. We must give up the bad, old distinction of body and soul, and treat each person as an indissoluble marriage of both elements. Result: the abolition of "physical" and "mental" training, and the cultivation of live interests which are both "physical" and "mental."

2. We must stop being contented with finding a single "cause" either for disease or for recovery. No single element, physical, chemical, or psychical, no drug and no person, ever causes or cures disease. The sickness and the cure are alike the resultant of many forces.

3. Since this is so, we must be watchful to avoid quenching with one hand the fire of life which we have kindled with the other,—to avoid neutralizing the good of one very serviceable kind of treatment by another kind of neglect. This last point I wish, before concluding my paper, to illustrate more in detail.

Again and again I have seen the good of physical exercise, massage, or Swedish movements, undone by neglect of the fact that these activities bored the patient to distraction. To some people Swedish movements are interesting and entertaining. The needed coöperation of brain and muscle, of interest and task is then attained, and benefit results. But if one is bored by a "constitutional," and detests pulling chest weights, more harm than good may result. There is no duty to pursue such tasks under these conditions.

On the other hand, the definite good that may accrue to the appetite, sleep, and spirits of a patient with appendicitis, when a Christian Scientist urges him to ignore his disease and go about his business, may be rapidly neutralized and disastrously overbalanced when death follows by the rupture of an appendix abscess into the peritoneal cavity.

the heart to get a grip of itself, so to speak, to recover its balance and resume its proper functions.

In the example just given—heart disease—the part played by the mind, either for good or harm, is always clear but is rarely great. Let us take an example in which mental influence makes more difference. Consumption is of course a disease of the lungs, yet many a consumptive has won back his health because he had a good stomach, a good digestion, and was able to take and absorb the extra nourishment necessary to fight off the disease process in his lungs. Other patients, whose stomachs are less ostrich-like, may yet win their hard fight against the disease because they have so much “backbone.” Nowhere does character tell more strikingly than in the fight against consumption. The patient who can avoid depression and keep up his spirits finds it much easier to keep up his appetite, and so his nutrition, and so the germ-killing activity of his tissues (“*vis medicatrix naturae*”). The patient who has the determination to carry out a boresome or repulsive régime—loafing day after day on his back in a dreary sanitarium, and cramming down the food for which he has no desire—will win back his life; while another patient, with an equal amount of disease, may die from want of faithfulness and stick-to-it-iveness under the same discouraging conditions. No reasonable man to-day believes that consumption is caused by mental states, or cured by them; but any one who has seen much consumption knows that, like every other disease, it is a vicious circle wherein not only the perverted action of various organs, but the activities of mind and spirit, play a part.

Health is a Self-maintaining Circle

NOW, since all sorts of forces, psychical and non-psychical, take part in the vicious circle which we call disease, just so the state which we call health is best conceived as a self-maintaining system, like the planets; a system in which each member supports and is supported by the rest. *Disease may thus be defined as a self-corroding circle, and health as a self-maintaining circle.* In this

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circle mind always takes its part, whether for good or evil; but, so far as experience has yet shown, that part appears to vary enormously in different diseases.

Realizing, then, that the whole man is always involved in the fight against disease, we can readily see that the distinction between "organic" and "functional" disease is not a distinction between a wholly physical and a wholly mental malady, because there are no such maladies. The simplest fright or worry may produce its physical effects (sweating, palpitation, insomnia); those effects then react upon the exciting cause, reverberate throughout every organ of the body, and in some cases through other people as well. At the other extreme, even a broken leg may be hindered in its healing by mental turmoil resulting in insomnia, which in turn leads to malnutrition and thus to a reduction of the healing power of the tissues.

"Functional" and "Organic" Disease Defined. "Mind" and "Body" not Distinct

SEEING that there are no purely mental or purely physical diseases, and that all disease "rings up" every organ of the body and is influenced in turn by every organ, most physicians have tried to distinguish organic from functional* disease according as the amount of actual destruction and degeneration of organs (the heart, the kidneys, and others) is great or small. Diseases like cancer, which plow through organ after organ, tissue after tissue, — or like consumption, which slowly burns up a lung, — are ordinarily reckoned as organic; while those which show after death few and slight anatomical changes in the organs are often classed as functional. But even this distinction is difficult to maintain, for in some of the most rapidly fatal diseases — such, for example, as death by lightning stroke, epilepsy, and many types of poisoning — there may be very slight anatomical changes. When the changes are largely chemical rather than physical, where it is a question of poisoning rather than of actual destruction of tissue (as in epilepsy, for example, or in morphin-

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On leaving the hospital the young physician throws himself into his career with perfect confidence; he believes himself armed from head to foot. He quickly perceives, alas! that he is not very often asked to perform a brilliant operation or an exquisitely careful dressing, that he can satisfy only a limited number of his patients with his prescriptions. He finds himself disarmed before the nervous patients who soon encumber his office.

"But what can be done? He follows the regular order. After having listened with a distracted ear to the troubles of his patients, he examines them, and proves with very little difficulty that their organs are sound. Then he draws out his notebook and prescribes: bromide of potassium. At the next consultation this will be bromide of sodium, or, perhaps, the sirup will be changed. At last he has recourse — ah, admirable idea! — to the combination of the three bromides.

"Not being cured, the discouraged patient turns to some other *confrère*, who, delighted by the preference just shown him, listens a little longer, examines him with a little more patience; he reflects, passing his hand over his anxious brow. Ten to one he will end by prescribing a bromide, or at least cacodylate of soda!

"There are many who have practiced these deceptions in their own *clientèle*. They ought to have said as I do: Is there really nothing better to be done?"

21. "*Physical*" and "*Mental*" not Distinct. — Before attempting to study what we may do by psychotherapy and how to do it, it is logical to estimate the power of the mind over the body and to find out what effect the body has upon the mind.

These questions have been touched upon in all philosophies, in all religions, and hence these nearly all contain, at least in an indirect form, something of psychotherapy. Upon the relationship of mind and body are based theories and dogmas. With these, however, we are not especially occupied here.

It should be noted, however, that the terms "mind" and "body" cannot be used by the physiologist and the pathologist in the same sense as by the philosopher and the theologian. In physiology we can divide its various phenomena into circulatory, respiratory, digestive, psychic phenomena, etc., and study the intimate bonds which unite them. In pathology we can investigate the changes of these phenomena in sickness. But there is no experimental procedure which gives us a conception of mind, or helps us to distinguish mind and body.

The terms "physical" and "mental" ("*physique*" and "*morale*") are, therefore, not legitimately employed in science. If, for convenience of language, we keep them, we must use the term "physical" for that group

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of phenomena to which the highest portion of the nervous system seems not indispensable, and "mind" ("morale") for that group of phenomena which depends upon these higher nervous centers and which in general is accompanied by consciousness.

This division is perhaps convenient, but it is inexact. And, as a matter of fact, no separation of this sort is possible in biology. In physiology, in psychophysiology and in pathology, there is no question of a separate mind or body. There is only a single organism with many different interacting functions.

It is not to be understood from this that we ignore those sciences which deal with the mind, or spirit, from other points of view. On the contrary, we admit their legitimacy and regret that in spite of the remarkable labors of philosophers and men of science, there are still persons who proclaim the shortcomings of science, philosophy, and religion, as if one science could condemn another when, in fact, their fields and methods are unrelated. — *Camus and Pagniez, "Isolement et Psychothérapie," 1904, pp. 131-132.*

Dr. Richard C. Cabot and his Work. — The Social Service Department of the Massachusetts General Hospital is described by Ray Stanard Baker in the January *American Magazine* as an illustration of the effort of the doctors to enter more deeply and vitally into the problems of human life. It is an endeavor to reach out by means of trained workers beyond the hospital with greater thoroughness than ever before. It is, in fact, an application of the principle set forth by Dr. Cabot, in the articles he is contributing to this Course, "to treat always the whole man." The plan is fully and sympathetically described by Mr. Baker. Of Dr. Cabot and his views he says:

"Dr. Cabot established the Social Service Department in October, 1905. He had long cherished the plan; indeed, he had grown up in the atmosphere of that humanitarianism which has so long marked the best thought of New England. His father was the biographer of Emerson; his mother, after raising a family of seven boys, became a leader in the public work of Brookline: overseer of the poor, member of the board of education. Her personality and influence are still felt in Boston. Dr. Cabot was educated at Harvard, first broadly in philosophy and psychology, afterward in the medical school: a man first, then a doctor. Though a member of no church, his view of life is profoundly religious: broad, deep, inclusive.

"'I mean by religion,' he says, 'the deepest that there is in any human being. When you reach the core of any man, you reach, it seems to me, the divine spark in him; that is, you reach his religion. Religion is not one energy or one interest among others, . . . it is the heart, the

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center, the core of every interest. In my opinion any man is slovenly and slipshod who does not find religion as the ultimate motive and goal of his task, whatever it is. Under this definition it is obvious that we cannot go to the bottom of any trouble, whether it be health or grief, or anything else, without reaching religion. If religion includes the whole of our life as a house includes a room, then the man who would set his house in order must know all the rooms, must know the whole of the house, before he ventures to touch any part of it."

Of the success of this new work, Mr. Baker says: "It has been highly successful, attracting the attention of earnest medical men from every part of the country; indeed, Social Service departments have now been established in a number of the most progressive hospitals of America, notably Bellevue and the Presbyterian hospitals and the Vanderbilt Clinic in New York, Johns Hopkins University Hospital in Baltimore, and the University of Pennsylvania Hospital in Philadelphia."

—Ray Stannard Baker, in the *American Magazine*, January, 1909.

The Next Article

EDITOR'S NOTE.—No question in the realm of psychotherapy is more under discussion at the present time than that answered by Professor Miller in the following article. Professor Miller addresses himself, in part at least, to the physicians. He contends that the clergyman who carries his ministry into the field of healing does not exceed the rightful scope of his vocation. He presents the fundamental argument, that to his mind justifies this position, as lying in the very nature of all religion, which he regards as a kind of psychotherapy. To give deliverance from the enemies of life — that from the first has been Religion's supreme function; and the enemies of life are both external and internal; physical as well as spiritual, Professor Miller argues. He holds that the clergyman has a psychotherapeutic task to perform which it is not in the power of the physician to attend to. He believes, moreover, that both physician and clergyman can derive much benefit from coöperation in this field, and points out some of the lessons it holds for each.

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which sends illumination into the remotest regions of vital fact. This was formulated as applying to all life by Mr. Herbert Spencer, who, though so often inaccurate as a speculator, was essentially a physiologist in habit of thought, in almost all the subjects he dealt with, and who had been, of course, a student of von Baer. The easiest way to state this definition is to say that all life is *reaction*. All life is an action back upon an environment which has begun the game by acting upon the organism in question.

We do not naturally think of organisms in this way. To us the living thing is precisely the thing that moves of itself, as contrasted with the inanimate thing which moves only when something else impels it. This is because we see the action of the living thing, but in most cases do not see the previous action upon it, which has perhaps come through the air and aroused hearing, or through the ether and aroused sight. Of course the organism acts, unlike an inanimate object, by an inner energy of its own; its motion is not communicated to it by the impression, but only aroused in it thereby. If we saw all that was going on, we should see that every action of a living being was a response to an impression from without. Spencer's undeniable service lay in his demonstration that this applied to the most complicated activities of man in society, — a commercial correspondence with China or the writing of a synthetic philosophy. The responsive action takes place, according to the familiar theory, to serve the purposes of life; to avoid dangers, to secure food, rest, warmth, the gratification of all wants. The organism that acts instinctively in that self-protective way comes through its ordeals alive and lusty.

This simple and long-standing conception, which, with whatever difficulties, holds its ground in the scientific mind, enables us to see the necessity and the office of religion. It may be said with sufficient accuracy of the whole brute creation that they react only to their immediate environment, or at least that their minds do not go wandering out over situations that make as yet no call for reaction at all. True, the swallow flying south is responding by instinct to remote circumstances, but at any one moment it is responding directly to present circumstances, even

though the instinct of migration adds the word to present wants that determines the precise nature of the reaction. Even the far-seeing condor, we have reason to think, is looking for his prey, and is not a thoughtful spectator of the wide scene which his vision has opened to him. Each of these animals is in a situation which calls for reaction. They make the reaction, and that is the end of the matter.

Man responds to a Disquieting and Bewildering World

WITH man the case is far different. In order that he may make his reaction more cunningly and providently yet, he has an imagination, a representative faculty, quite incomparably wider in range than we can ascribe to any brute. And he can use both his imagination and his senses in moments when no need presses. He thus becomes aware of a vast extent of existence which the brute ignored. He has, in effect, a vast and far-stretching environment, while the brute has only a near or at least a highly restricted environment.

Now this vast environment which opens to man suggests to him the question of appropriate reaction. There is his whole future, and there are all the dreary wildernesses and threatening ambushes of the world stretching around him to be faced and dealt with, each when the moment comes. These things *suggest* reaction, but do not yet call for any specific reaction. There is peril in them; and he does not yet know how it is to be met. Their presence to the mind is thus vaguely disquieting.

If we translate this into the language of our own lives, its truth becomes obvious. We are depressed by solitude and the uncertainty of the future and the multiplying difficulties of the world simply because we are possessed of minds that can look far afield. Without such minds we could not have attained our present life; but with such minds we cannot be at peace,—if there is no other element in our situation. For such minds acquaint us with a wilderness of facts and possibilities which are likely to require desperate reaction in time, but to which

we can effect no general and saving reaction here and now. The calls come to us in advance as from one distant, confused chorus; but what the due answers will be, only the future details can show. The early history of the human mind is full of the melancholia of adolescence. If we could react *now* and feel the situation met, the predicament over, and ourselves safe, the disquietude could vanish.

Religion Frees from Disquiet and Fear

AS it is, the alternatives are clear. Either we must cease to think except strictly for some practical purpose in hand, or we must *find some way* to react now, to our final relief and satisfaction, with respect to all the exigencies that environment may have in store for us. If peradventure all the multifarious facts of the world are subject to one power, and we can make our terms with that power and thus secure our safety in advance, the emotional problem is solved; we may dismiss our fears. Otherwise there is no solution.

The power may, for example, be personal. Then sacrifice, etc., may propitiate him and make him our protector. He need not be a single power for all the world, but perhaps only a single power for a certain group of phenomena, as in the crude stages of religion. However, in proportion to the enlargement of our representative faculty we shall crave the knowledge of a *supreme* power, a power over all things, a power whose guarantee carries absolute security, if not of the body, then of the soul. In Buddhism the supreme and sweeping fact is not a person but a law; a law, however, which takes account of the most intimate circumstances of character and inward life, and befriends the soul that turns its will in the right direction. A single and simple law may give security, like a single person. It cannot on this account be said, however, that science, with its manifold laws, may meet the need. Science arises as the knowledge of all the specific reactions that will have to be made to meet the special needs of safety and life as they present themselves. If

to treating with the world-power. By this self-humiliation men make terms with the government of things. The peace of mind is encountered in the quest for God and found with God. The distress of body, after God is found and accepted, appears as a means of keeping the body subject to spirit, and of holding and exalting the deep-seated peace of the latter. Whatever enlightened religion may think of the odds, we can hardly wonder at them, when they are deemed to the absolute security at stake.

Conformity to Divine Will, Religion's Answer to Omnipotence

IF there is thus an invisible governor of facts with whom we may treat and have direct invisible relations, what does he require of us? For beings not lifted above greed, he appears as a greedy being who wants our tribute of good things. The Hebrew prophet he requires nothing but that we shall love him and love mercy and walk humbly with him. What is the explanation of this difference? What determines our notion of the tribute that the supreme one requires of us?

It is because of the innumerable requirements of life which our minds have clutched at him as one who controlled those requirements. Thus, one requirement is substituted for many requirements; and the one requirement is to conform to his will. What is his will? *He unifies the requirements of life*; and we, as men have no key to his will but — the requirements of life which he unifies them and he epitomizes them. In the exertions of life we must wait in enforced patience for the task of each moment. Religion enables us to pour out to him in advance the requirements of our soul about all tasks.

Only, since he arises before the mind because he is present in one of many scattered, trying, and exacting situations, — his special benefit to enable us to deal with the many requirements of life, — the one, — the more puzzling, the more intangible, the more subtle requirements of life will have after a while their embodiment in him. Food and warmth are requirements

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so, and more and more so, are society and mutual accommodation and service and sympathy. The Deity may begin as the patron of hunting or thieving; but he becomes the patron of industry, of kindness, and of devotion to the group. As he epitomizes in himself the objects of "reaction," so the reaction toward him tends to epitomize all the reactions of life. Our conduct toward him must stand for the means of getting what we need. We trust to his protection both physically and spiritually. We ask him to give us our daily bread, to give us moral strength, and to give us his presence in our spirit.

The Higher Religion. Man's Struggle with Himself

THUS religion, which in this cold-blooded account appeared profoundly selfish, becomes profoundly unselfish. The world-power steadfastly requires of us the highest conduct and the highest feeling that have come in sight of the moral consciousness. It does so because it makes of us the great demand of life, which is not only the demand of outward circumstance and social pressure, but of the equilibrium of the spirit of a social being. The object of religion must be a power that secures to us what we most essentially need; and as our ends become unselfish, it appears as guaranteeing those ends, and thus as the stay, the encourager, and the reënforcer of unselfish life. It gives us the peace of knowing that our efforts are in the direction of its own working.

The character of this supreme being, as presented towards us, must be seen in the light of his demands upon us. It must, to the enlightened mind, be steadfast and even stern, but embodying the perfect fulfillment of the law it lays upon us — stored with all the riches of our best ideal. We ourselves too may have a share of these riches in converse with him. Human companionships are imperfect, there is misunderstanding on the part of our friend, failure of sympathies, inevitable separation. But the divine power controls all, penetrates all, and is in its spirit ideal. In the relation with it opens the possibility of a companionship in which understanding is complete, sympathy unfailing, and presence constant.

And now comes a new and extraordinary phase. Man discovers that he has to struggle and contend, not only against his outer environment, but against himself. There are impulses that in certain moments he would gladly make supreme over his life, gladly form into resolutions; but they are soon borne down by the impulses that other moments rouse. The spiritual weather within him is subject to change, heat giving place to cold and cold to a dull medium. There are indescribable times of moral paralysis. One could rule oneself if the same ruler were always there. Life is bewildering, memory short, circumstance fleeting, consistency difficult. Reason, habit, inertia, the appetites, the aspirations, are at friction with one another. He discovers the chaos of himself. Like the environment, he too has uncontrollable possibilities—unless here also there is a controlling power with which, as it were, an understanding can be reached. If so, he may hope to attain some inward peace.

Strength to the Soul brings Strength to the Body

INWARDLY now he makes submission to the divine power. He invokes its protection against unruly forces in himself. He asks the divine power to take command in his soul, to save him from yielding to temptation, to pour in the reinforcements of its spiritual aid.* Here is a notable proceeding—the typical proceeding of religion now carried into the penetralia of the soul. One moment tries to win security for all the moments—tries in one act to provide for all the unexpectedness of life. Its act—its “reaction”—is the religious reaction, the sacrifice and self-surrender to God, that he in his turn may invisibly safeguard what we hold dearest.

Only, in this innermost theater, the transaction tends to work its own fulfillment. To turn to personified goodness and yield oneself, is by the very act to work upon oneself, to mellow in some degree the future disposition of the soul. The highest form of the religious act is to pray, no longer for God's gifts, but for his presence itself. And this very prayer is a potent force in transforming the inner man.

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That which relieves the soul relieves the body. The unrest that religion has power to cure is not only a mental unrest, but also a bodily unrest. So is man constructed. To relieve that bodily unrest is in itself to leave the nervous system and therefore the organism at large in a more healthy state. This is not wire-drawn logic, it is daily experience. More than this: the sense of divine presence which brings strength to the soul brings strength to the body.* By the soul I mean no dubious entity, but only the higher portion of our stream of consciousness. This stream, and the tides of physical life, are far too intimately connected to admit of the rise of one without the other. Further still: The divine presence anywhere is the presence of Good, and steadily tends to the defeat of evil. The sense that God is in our whole being does make for the vitality of every organ and the cure of every ailment that the state of mind can affect at all.*

Thus we see gradually a singular transformation. That which in its crude beginnings was but a guarantee of our own safety and success in dealing with our environment and securing what we care for, more and more becomes itself what we care for. At first we want it for its service and at last we want it for itself. To the end the first need survives, for we have still to live in an environment. But the peace and harmony of spirit that religion comes to bring are drawn ever in greater measure from the presence and sympathy of God.

These considerations make clear how it is that religion, regarded scientifically and from without, is "psychotherapy." It is the relief of souls, and ministers through the soul to the whole vitality by allaying unrest and restoring confidence.

It is as seen from Within that Religion Reveals its Power

I HAVE gone down into the valley of analysis that I might come up nearer to my objective point. It is a cold valley. I have regarded religion scientifically and from without. Let no one fancy that to talk in this way about it is to convey what it is as a living experience. We talk as though it were a sop fortunately

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furnished by the imagination to quiet the disturbed mind of a primitive being. We think patronizingly of "man," gauging in cool observation the psychological forces that depress him or lift him up. What has been said is, I think, true, so far as it goes. It goes but a little way. It is a truth about certain limited relations of our subject.

It is not as regarded from without but as regarded from within that our subject gives up, to the mind that would know it, its depth and power. Regarding it from within we should not long be tempted to patronize. We should not only see man but be man. We should feel that the question of life, the question before us, was the question of the good, of intrinsic value, of deepest satisfaction, in whatever quarter this (for I am expressing but one thing in these different phrases) may live and glow for us. We should turn toward the blessed in experience, open to it, welcome it, and make it prevail. We should drink at the springs of strength. Our faith would arise from experience, for we should have found, upon trial, that which insures to us what we hold dear and sacred.

The Physician's Equipment should include Sincerity

BUT—skepticism! "Religion may be efficacious,"—so the objectors reason,— "but is it intellectually credible? It may be a potent sedative or stimulant, but the physician may scruple to use a drug for the heart that will weaken the brain. We may perfectly understand, as psychologists, that men find themselves chilled and bewildered by the vast intractableness of things, and crave the ability to strike a league with some single head of it all that will lend them security; yet, as logicians, we may see not a tittle of evidence that such a governing head of things exists. How do we know that there is any complete security in the world to be had? We may have to go without it, and merely learn like the brutes to confine our minds to the business in hand, and not to think of subjects that do not profit us. Scientific medicine * is asked to welcome the aid of a new method.

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This method requires its practitioners to believe in certain extra-medical propositions which are in their nature highly questionable, and which many physicians regard as very amiable superstition. As scientific medicine it cannot do so. It can use and welcome only medical methods and propositions that can be put to scientific test."

Much of this reasoning is sound. It is not, to be sure, precisely in harmony with the doctrine so widely taught in the medical profession that veracity to patients is no virtue in a doctor where falsehood will do them good. Upon this doctrine "superstition" should be a drug entirely welcome to the doctor's hand. It is to be hoped, however, that attention has been widely given to Dr. Richard C. Cabot's admirable experimental study of truth and falsehood in medical practice. I fully share his carefully grounded conclusion that falsehood should be discarded altogether. Let us agree that no doctor should try to convince a patient of what the doctor does not believe, or, in any but exceptional cases, give silent coöperation to others, even if they are believers, in trying to produce such a conviction. It remains true that there are doctors enough who do believe to supply the need of the clergy for coadjutors. And to no conscientious or intelligent doctor is a proposition extra-medical which concerns the health, or means for the health, of his patient.

The Clergyman's Standpoint

NOTE the position of the clergy in the matter. Religion by its innermost nature has something to say about peace, trust, and the satisfying sense of divine presence; about the restoring and vivifying quality of this presence; about the love that casts out fear; about the regimen of the spirit; about the kinship of the divine with all sound and healthy things; about "the stream of tendency by which all things seek to fulfill the law of their being." Upon the ministers of all developed religions, and signally upon the ministers of Christian religion, rests the law of sympathy and service. Haunting the minds of the latter are the

tions, as there is a justice of the intellect ; a truth in the scale of values as there is a truth in the gauge of facts. Only, to view a thing in pieces is not the way to feel the value it has in our natural experience. Values of beauty, of personality, of indescribable inward experience can be rendered only by a far different method, that of summoning them up to the listener's imagination in that undivided vital freshness with which they first appeared to us in life. It is a method that renders "the spirit of the thing." The most directly potent form of human utterance is not analytic. It is the communication of a spirit, the imparting of a passion.

The Inadequacy of Mere Science

ACCORDINGLY, the most fortifying or healing touch upon the human spirit must be of this latter order ; and hence it is that the treatment of illness can never be wholly scientific. The part of the minister, when he ministers to a mind diseased, or to a suffering nature that may be strengthened through the mind, is to communicate certain states of mind, and to render them in all their value, in all their strength and calm. His part is to speak in living language out of his living experience.*

Many skeptical scientific persons look upon clerics as a regrettable body of men, of insufficient education or intellect, who in the confusion of the world's affairs do some good, no doubt, but whose logical sense is somewhat blunted or softened, and whose good accordingly is based on delusion. Many clergymen of modern training have grown to look upon men of science as a body of "intellectuals," whose minds, "fresh and excellent," as the curate said of the egg his host had given him, "in parts," are curiously degenerate in other parts ; they are practiced in one kind of analysis or another ; but analysis has become an idol of the den with them ; they imagine that the object of life is a certain correct analytic report of things, which they call truth ; limited in their acquaintance with men and misery, they do not see that their truth is only a means to the creation of good experience, which is the real object of life — good experience "in widest common-

ing of strict intellectual morality. The physician will discover that bare intellectual propositions do not comprehend the whole body of truth. He will learn a new scale of life-values.

Notes and Collateral Reading

[Numbers refer to pages in text.]

35. *Religion as Psychotherapy.* — I have seen Catholic priests repeat under another form what, in the course of treatment, I have often told my patients, and so help me more in my work than many of my confrères would have been able to do. I meet pastors at the bedsides of patients, and there we find ourselves on common ground, despite the difference in points of departure. It is not at all necessary, however, in order to enter their brotherhood, to put on a white tie and make a profession of faith.

— Paul Dubois, M.D., *The Psychic Treatment of Nervous Disorders*, Funk and Wagnalls, 1908, p. 44.

39. *Religious Psychotherapy to expel Fear.* — We have no right to expect broken bones to unite, malignant growths to disappear, or infections to cease their poisonous working under spiritual influences alone. The fears and depression which may accompany these conditions ought to and do yield to kindly and wise suggestion. Physicians who see "nervous" patients are familiar with many manifestations of this emotion in varying degrees. We see fears of failure, of poverty, of sickness, or of death; also the illogical fears which their victims describe as foolish, yet find it so hard to ignore. Worry is usually only another name for fear and may be, if long continued, the direct cause of certain organic lesions.

In recognition of this fact various religious leaders have preached courage as a virtue. In our battle against human ills it is at this end of the line that the clergyman and the physician touch elbows and meet a common enemy.

— Edward B. Lane, M.D., in the *Boston Globe*, Dec. 27, 1908.

43. *Help from the Divine Power.* — Man is both body and soul. His body an animated parcel of matter, exposed to all material forces, to all natural risks. Gravitation, as Pope insists, cannot cease "when we go by"; and the consequences follow, even if they are death, or maiming, or bereavement and perhaps a grief that is almost despair. But man is also a soul, great enough to be capable of God's friendship, while little enough (in soul and body alike) to need God. And, if he is really in touch with God, evil becomes discipline and sorrow is transfigured by faith. One may

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compare at this point Professor William James's grouping of religions—healthy-mindedness and the sick soul. . . . The simplest formula for religion is such as this: "I was brought low and He helped me." One need not insist on the HE. "It" helped me—"something" helped me—from the psychological point of view that might suffice.

—Professor Robert Mackintosh, M.A., D.D., *The Hibbert Journal*, October, 1907.

43. *Health and the Religious Appeal.*—There is no doubt that in diseases like those mentioned,—neurasthenia, hysteria, alcoholism, sexual neuroses, and psychoses, much may be done by systematic psychic treatment, and one effective way of obtaining results may be appeal to the religious sense of the individual. Religion, of course, is here used in its broadest sense as the foundation and motive power of all that is worth doing, and need not necessarily be restricted to Christianity, as has been done in the work above mentioned. The same psychologic principles underlie other modes of treatment—faith healing, Eddyism, Dowieism, and numerous other beliefs. But the method followed in Boston is a decided step in advance of most systems that attempt to heal, in that it requires the diagnosis of a physician.

—*Journal of the American Medical Association*, March 1, 1908.

44. *Medicine and the New Method.*—Despite the fact that psychotherapy has been so prominently extramural in source and prevalence, it is to be said for medical men that when convinced of its efficacy and legitimacy they have been willing to adopt it. Further, for the foundation of the theory of the subject, and for nearly all actual scientific knowledge regarding it, the world has to thank the investigations of members of our profession. Any neglect, recalcitrance, or protestation on the part of physicians in the matter have been due, in my opinion, partly to a desire to avoid even the appearance of evil and humbug, partly to the exercise of so much zeal in those physical, chemical, and biologic studies which are flooding our science with new light that less time and attention have been devoted to psychologic and psychiatric studies than they deserve.

—Lewellys F. Barker, M.D., in the *Journal of the American Medical Association*, Aug. 1, 1908.

46. *Professional Skepticism and the Mind-Cure Movement.*—How far the mind-cure movement is destined to extend its influence, or what intellectual modifications it may yet undergo, no one can foretell. It is essentially a religious movement, and to academically nurtured minds its utterances are tasteless and often grotesque enough. It also incurs the natural enmity of medical politicians, and of the whole trades-union wing of that profession.

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But no unprejudiced observer can fail to recognize its importance as a social phenomenon to-day, and the higher medical minds are already trying to interpret it fairly, and make its powers available for their own therapeutic ends. — *William James, in the American Magazine, November, 1907.*

The methods of mental treatment or 'psychotherapy' are many: explanation, encouragement, work-cure, psychic education, suggestion, and others. With all of these, ideas of the philosophy of life may be associated. With all of them, therefore, religion may be associated. Into all of them reason may enter. It is the sanest appeal that is best.

The Next Article

EDITOR'S NOTE. — That much of what is new in psychotherapy is in the name itself and not the thing must impress the reader of Dr. Batten's accounts of Old Testament Healing. This modernness of ancient methods is revealed most clearly in the following article which throws the light of present-day interpretation upon three of the most striking narratives dealing with healing in the ancient Scriptures. With his comments upon these cases illustrative of Old Testament Psychotherapy Dr. Batten closes his series of papers. The historical accounts of the religious phase of the subject will be carried to their next stage by W. L. Bevan, Ph.D., Associate Editor of *The Churchman*, with an article on the History of Healing in the New Testament.

HISTORICAL SECTION
ARTICLE III

Healing in the Old Testament¹—III

BY THE REV. LORING W. BATTEN, PH.D., S.T.D.

Rector of St. Mark's Church, New York; Professor of Old Testament Literature
and Interpretation in the General Theological Seminary.

THERE are three cases of healing in the Old Testament that are surely historical, and of which we have an adequate record. This paper may fitly close this series with a somewhat fuller account of these instances.

The scene of the story of the Shunamite's child (II Ki. iv²) is laid in the valley of Jezreel, in the far northern part of Palestine. A rich woman in Shunem had borne a child in her old age, and children being highly prized in the Orient, and this being an only child, it was naturally close to the parents' hearts. How lifelike is the story that when the child was grown to be a full boy he went out to the harvest field to see his father busy with the reapers! He was an active child and the sun was hot. Then there comes the cry to his father, "My head, my head!" and the child collapses with a sunstroke or heat prostration.

The father was but a rough man and hard pressed by the work in the field; he had no qualities for caring for the stricken child. But he knew that there was a gentle hand and a loving heart at his home, and so the order was given to the servant, "Carry him to his mother." The narrative has it that the child

¹ See note under "The Next Article," preceding page.

² There is a strikingly similar story in the history of Elijah (I Ki. xvii, 17-24). The differences in detail, however, are too great to permit identification, though there may be a certain interdependence of detail.

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"sat upon his mother's knees," but the Greek reading is better here, "lay asleep upon his mother's knees" — that is, never regained consciousness. At noon the child died. The mother, for reasons by no means clear, desired to conceal the death of the child, and laid the body in the prophet's bedchamber.

While the child still lived there is no hint that anything was done to save its life. Certainly no physician or other help was summoned. But now the mother goes in all haste to seek Elisha the prophet. When the prophet hears the sad news he directs his servant Gehazi to take his staff and go with all possible speed and lay it upon the face of the child. The mother is not satisfied with a magic wand, and insists that the man of God shall accompany her in person. On the way they meet the fleet servant returning, whose report justifies the mother's suspicions, for the result of his use of the staff was nil, "there was neither voice nor hearing." The "king's touch" cures some diseases, but not all.

When Elisha arrived he excluded both the mother and his servant from the room in which the child lay and then he prayed. After prayer he proceeded to action. Unfortunately, the text is corrupt at this critical point, and we are doubtful about some of the details. But the general course of his action is clear. The prophet lay down upon the child, mouth to mouth, eyes to eyes, and hands to hands. Then, as usually read, the prophet "stretched or bowed himself upon him," but the meaning of the word is unfortunately unknown. He could not bow when already lying flat upon the child. The happy result is, however, plain: "The flesh of the child became warm." The prophet arose, walked about a while, then returned and repeated his action. Hereupon the boy opened his eyes, and the mother was called to behold her child.

Explanations of the Story

THERE are three explanations of the story: 1. That it belongs to a legendary collection. 2. That a miracle was wrought, the prophet restoring to life a child that was dead. 3. That the

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prophet revived a boy who was in a comatose state. Nothing need here be said about the legendary theory, for it has little in its favor.¹ In support of the second view is urged the statement that the child was dead. But this, I think, only means that the mother thought the child to be dead, and we have often heard the caution that only expert opinion is competent to settle that point. On the other side, we have to note the mother's haste to reach the prophet, and the prophet's urging his servant to travel with all speed. Now this haste was important if there was still a chance to save life, but otherwise is meaningless. Indeed, if a great miracle was to be wrought, delay would enhance its marvelous character. Thus Elijah wet the wood before he sought miraculous fire. We may contrast the deliberateness with which Jesus approached the house and sepulcher of Lazarus.

Again, if a stupendous miracle were the prophet's aim, the magic staff laid upon the child's face would have been more impressive than the procedure of Elisha. In spite of the textual obscurity, it is clear that the prophet tried by natural means to restore the circulation and respiration. The warmth of his body started the circulation, so that the flesh of the child became warm. Still, consciousness did not return. The seer then walked "once in this direction, once in that," either according to a magic formula, or merely to rest. Upon the renewal of his efforts the child opened his eyes. The story is told with amazing sobriety, and in that respect compares very favorably with many of the interpretations which have been offered.

The story seems perfectly natural to me and intelligible from experience. I was fishing in company with a farmer one hot day in July when I was overcome by the sun's fierce heat. I also could have cried, "My head, my head!" I lay for about six hours "without hearing or heeding," and at times my friend, who was not very experienced in heat cases, thought I was dying. All the time my flesh was cold. Finally, I began to get warm,

¹ In favor of the historicity is the evidence that the story was for years afterward in circulation, finally reaching the ears of the king. The woman herself outlived Elisha and confirmed Gehazi's account (II Ki. viii, 6).

opened my eyes, and ate a hearty supper. Had my companion been as wise as Elisha he might have curtailed the attack.

The Cure of Naaman's "Leprosy"

THE fact that Naaman, the Syrian general (II Ki. v),* whose malady was diagnosed by the Syrians as leprosy, was still allowed to go at large and discharge the duties of his high office, indicates that his disease was not regarded as of a malignant or infectious type. It happened that his wife had as maid a Hebrew slave, captured in a raid. She told her mistress that if her lord were before the prophet of Samaria he might be cured of his leprosy. That matter is important, for it shows plainly that Elisha had a reputation as a healer of disease. How far it had spread we do not know, for we have no idea where the home of the captive had been. The King of Israel is less informed about the great prophet; but kings are not always cognizant of all that goes on in their realms.

Passing over the well-known details, Naaman appears at Elisha's house. The prophet does not deign personally to receive his august visitor, but sends a prescription by his servant, "go wash in the Jordan seven times, and thy flesh shall come again to thee." Evidently Elisha recked little of diagnosis, and was not doubtful of his ability to cure all diseases. We recall the sufferer's indignation at the simple prescription. He expected the prophet to come out, stand, and call upon the name of his God, and wave his hand over the sore, and thus charm away the leprosy. In other words, he wanted a miracle wrought, and with appropriate accompaniments.

The irate general's spirit was soothed by his servant, and he took the Jordan baths. That an antiseptic washing would have served a good purpose, I have no doubt. A dog heals his wounds by licking. Still, the mere application of the Jordan water could have had no therapeutic value. But it would have served as the vehicle of suggestion, and so the cure can be satisfactorily explained.

This cure may be illustrated from "case" material. A young

* See note at end of article.

the prophet was the healing of disease,¹ we may safely infer that the prophet was summoned, because he was accustomed to treat disease, and because he was close to God and could, to a certain extent, command divine intervention. The prophet-physician examines his patient and pronounces the malady incurable. That he used the abrupt and depressing words, "thus saith Jehovah, set thy house in order; for thou shalt die and not live," we cannot affirm very confidently. But we may hope that a prophet of God did not feel bound to deceive his patient, as many modern physicians do.

After delivering his unfavorable message Isaiah left the palace, and the king turned to the wall and prayed and wept. He knew that there was a court of last resort to which an appeal was possible, even from the verdict of a great prophet. It is well for all sick people to bear that fact in mind. Hezekiah's prayer is interesting, for he bases his claim to divine consideration not upon his personal unworthiness, but upon the correct course of his life. He pours out no penitent wailing, but recites his efforts to live and work for God.

Isaiah Applies Psychotherapy

IF one believed in telepathic influences, he might readily surmise that Isaiah was unconsciously impressed by what was going on at the palace. At all events, as he walked through the city, or perhaps the palace, he was thinking intently of his royal patient and the depressing scene which he had just left. As often happens, an idea occurs to him, and so surprising and convincing that, naturally for a man of God, he calls it by its right name, a message from Jehovah. He hastens back to the royal bedside, declares that God will heal the sufferer, and that in three days the patient will be out of bed and able to walk to the temple. But as the means whereby his word would be fulfilled and the divine healing accomplished, he directs a fig poultice to be applied to the boil.

¹ Astley, "Prehistoric Archaeology and the Old Testament," p. 162. Cf. also *supra*, p. 45 f.

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Isaiah did not believe that God wanted to do his beneficent work as far removed as possible from all material agencies, but rather delighted to operate through those channels. Dr. Bennett ("Diseases of the Bible," p. 103) blows hot and cold at once in regard to the poultice. In successive sentences he says that it would be an appropriate remedy, and that it was but a symbol of the divine interposition! As if the doctor should prescribe quinine for malaria, and pronounce his medicine only a symbol. If that were the case, bread pills ought to cure everything.

Isaiah is wise enough to know that important as the poultice is for the boil, there is another factor in the recovery, and that is the mind of his patient. He discovers that he lacks faith, hope, and courage. Eliminate those qualities, and the poultice might be a symbol of death. The sufferer must be put in the right mental attitude, or recovery is impossible. The patient must be made to believe in his own recovery. This is accomplished by the sign of the return of the shadow upon the dial of the step-clock. Curiously, interpreters have clamored for and against the miraculous character of the sign. What difference does it make? Isaiah was not troubled about that aspect, but only about the therapeutic value of the sign. It served the purpose of restoring Hezekiah's hope and faith, and that was its sole design. The poultice and the sign, the physical and the spiritual, neither one alone, but the two in combination, these were the means by which the king's disease was cured, and fifteen years added to his life.

Editor's Summary

Professor Batten in this article takes up what he regards as the three most striking illustrations of healing in the Old Testament. Their details bring out with fresh force points made throughout his articles that in the Old Testament healing was closely bound up in religion. It was to God that the prophets turned for help in their miraculous seeming cures.

The restoration of the Shunamite's child by the prophet Elisha, Professor Batten interprets as a cure of sunstroke by natural means.

The story of the cure of Naaman's leprosy he explains as a case in which Elisha successfully employed "suggestion" to heal a non-malignant type of leprosy.

In the healing of Hezekiah by the prophet Isaiah, the writer sees again an application of suggestion, spiritual and physical means being used in combination.

Notes and Collateral Reading

[Numbers in italics refer to pages in text.]

58. *Naaman Cured of Leprosy.* — Now Naaman, captain of the host of the king of Syria, was a great man with his master, and honourable, because by him the LORD had given deliverance unto Syria: he was also a mighty man in valour, but he was a leper. . . .

10. And Elisha sent a messenger unto him, saying, Go and wash in Jordan seven times, and thy flesh shall come again to thee, and thou shalt be clean.

11. But Naaman was wroth, and went away, and said, Behold, I thought, He will surely come out to me, and stand, and call on the name of the LORD his God, and strike his hand over the place, and recover the leper.

12. Are not Abana and Pharpar, rivers of Damascus, better than all the waters of Israel? may I not wash in them, and be clean? So he turned and went away in a rage.

13. And his servants came near, and spake unto him, and said, My father, if the prophet had bid thee do some great thing, wouldest thou not have done it? how much rather then, when he saith to thee, Wash, and be clean?

14. Then went he down, and dipped himself seven times in Jordan, according to the saying of the man of God: and his flesh came again like unto the flesh of a little child, and he was clean.

— II Kings vi.

59. *The Healing of Hezekiah.* — In those days was Hezekiah sick unto death. And the prophet Isaiah the son of Amoz came to him, and said unto him, Thus saith the LORD, Set thine house in order; for thou shalt die, and not live.

2. Then he turned his face to the wall, and prayed unto the LORD, saying,

3. I beseech thee, O LORD, remember now how I have walked before thee in truth and with a perfect heart, and have done that which is good in thy sight. And Hezekiah wept sore.

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4. And it came to pass, afore Isaiah was gone out into the middle court, that the word of the LORD came to him, saying,

5. Turn again, and tell Hezekiah the captain of my people, Thus saith the LORD, the God of David thy father, I have heard thy prayer, I have seen thy tears: behold, I will heal thee: on the third day thou shalt go up unto the house of the LORD.

6. And I will add unto thy days fifteen years; and I will deliver thee and this city out of the hand of the king of Assyria; and I will defend this city for mine own sake, and for my servant David's sake.

7. And Isaiah said, Take a lump of figs. And they took and laid it on the boil, and he recovered.

8. And Hezekiah said unto Isaiah, What shall be the sign that the LORD will heal me, and that I shall go up into the house of the LORD the third day?

9. And Isaiah said, This sign shalt thou have of the LORD, that the LORD will do the thing that he hath spoken: shall the shadow go forward ten degrees, or go back ten degrees?

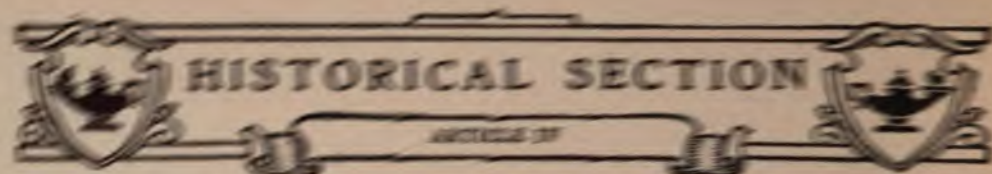
10. And Hezekiah answered, It is a light thing for the shadow to go down ten degrees: nay, but let the shadow return backward ten degrees.

11. And Isaiah the prophet cried unto the LORD: and he brought the shadow ten degrees backward, by which it had gone down in the dial of Ahaz.

— *II Kings xx.*

The Next Article

EDITOR'S NOTE. — In the following article we give for the first time in English the classic description of psychotherapy as practiced by Professor J. Déjérine, the famous physician of the Salpêtrière at Paris. The translation from the book by Camus and Pagniez is the joint work of Drs. Frederick Peterson and Evelyn Garrigue. With this article the history of psychotherapy in the light of medical science is taken up in one of its phases, the use of influences acting through the mind in connection with drugs. It throws an interesting side light on the history of quackery. Succeeding articles in this series will deal with the history of psychotherapy by means of "miracles," the history of hypnotism and suggestion, and the history of "persuasion."



The History of Psychotherapy—I

The Psychotherapy of Drugs¹

BY FREDERICK PETERSON, M.D., AND EVELYN
GARRIGUE, M.D.

From the French of Camus and Pagniez²

NO one hesitates to admit the existence of psychotherapy. Where it commences and where it ends are points much more difficult to decide. Some physician, convinced of the power of a remedy, applies it to a patient, cures him, and by that is assured of the efficacy of the drug. Another physician with different experience, considering both the nature of the remedy and the nature of the illness, will see in this cure nothing but the result of a psychic action, of an unconscious suggestion. According to the perspective by which the question is surveyed, psychotherapy may be found where it seems to be absent, or it may be denied where it exists.

When a patient is cured by hypnotism or by suggestion in the waking state, psychotherapy is used; every one agrees on this point. But can it be affirmed that psychotherapy is contained wholly in suggestion, conscious or unconscious?

When we advise a patient, when we prove to him by argument or reason the untruth of the ideas he believes true, the erroneous interpretation of sensations which he regards as real, we use a form of psychotherapy; only here the patient takes part, makes his own estimate, and his own decisions.

¹ See note under "The Next Article" on preceding page.

² J. Camus, M.D., and P. Pagniez, M.D., "Isolement et Psychothérapie."



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But according to Bernheim, to whom we owe thanks for making suggestion clear, for giving it its precise value and pointing out the way to use it, psychotherapy consists entirely in suggestion.

As for us, we believe that psychotherapy includes conscious and unconscious suggestion in both hypnosis and the waking state, direct and indirect, auto-suggestion induced by reason, psychotherapy by persuasion and reason.

It is always dangerous to attempt a definition of subjects which every one apprehends, but which seem by nature indefinable. However, we think we may consider psychotherapy (medicine of the mind) as the combination of means by which we act on the mind or body of the patient with the view of effecting a cure by means of the intervention of the mind.

Existence of Psychotherapy Throughout History

IF it is difficult to fix the limits of psychotherapy to-day, it is not less difficult to determine them in past times. To consider this science only in its conscious manifestations, in its regulated medical practice, it would appear to be entirely of modern origin, having come to life only yesterday. In regarding it as *unconscious*, often involuntary, it has played a part in medicine since the earliest ages of the world.

From the fact that the study of hypnosis has engrossed the attention for about twenty years and that cures from suggestion are still of quite recent date, we cannot conclude from this discovery that voluntary and conscious psychotherapy belong to our epoch, because the employment of psychotherapy by suggestion and hypnosis had long been preceded by the psychotherapy of persuasion.

Take the words of encouragement, of confidence, instilled by every physician into his patient; these words, instead of being the paltry alms of a kind heart to a suffering being, may become a discourse, a dialogue in which the physician will, in the simplest manner, compel the thoughts of the patient to turn from his ills,

inspire courage, revive hope, "change his state of mind," make him understand the possibility of cure, and the importance of co-operation; and thus we shall have the psychotherapy of persuasion. While this involves suggestion, it is not only suggestion, because "in suggestion the subject," to quote Grasset, "obeys without criticising, without reflecting, without reasoning, without deciding that he has neither to accept nor to consent; he acts in accordance with the suggestion."

What physicians have done by instinct from time immemorial, others have done methodically with deliberate purpose, and have sought to act on the mind in contending against sickness and sorrow. These are the moralists, the religious, who, directing the conscience towards an ideal of perfection, have always had to struggle against false ideas, fears, scruples, hopelessness, aboulia; and have recorded in their writings the assertions they had to make, and the rules that they followed. This was of course a form of psychotherapy, often with identical aims and achieved by similar means, although it might not always be addressed to the patients in the exact sense of the word.

That is to say, if the psychotherapy of persuasion seems more recent, it has only the appearance of being so, since its use by physicians is more recent. We only wish to show in this historical sketch that like suggestion, conscious or unconscious, which has existed from time immemorial, psychotherapy by argumentation is also of very ancient origin.

However, if all the voluntary or involuntary methods of psychotherapy are of ancient date, our epoch has a real merit; that of determining the mechanism of their action, of specifying their usage, and of grouping together the scattered rules and indications. From the historical standpoint, it would be tempting to consider psychotherapy throughout all periods, to trace the various methods through the different eras, and to determine the system most important to medicine. But this proceeding would necessitate repetitions or leave gaps, and although psychotherapy may be a unit, we have preferred to sketch the evolution of each of its principal forms. We shall first study psychotherapy associated

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with drugs, then psychotherapy as related to miracles, then hypnotism and suggestion, and finally psychotherapy by persuasion.¹ But it must be understood that this is an artificial order which makes no pretense of corresponding to the evolved order of facts.

Psychotherapy in connection with drugs and miracles has existed at all times in medicine: it is suggestion made effective either by the use of medicines or by the intervention of the miraculous, often by an intimate mixture of the two, the miraculous enveloping the remedy as gold or silver powder envelops a pill.

Psychotherapy in Connection with Drugs

SUGGESTION in connection with remedial agents has existed in all ages; the unheard-of number of remedies which man has endured and swallowed since the existence of medicine, sufficiently demonstrates the fashion and success of certain remedies. Ever since the existence of physicians properly so called, in contradistinction to priests, who long retained the secrets of the art of healing, examples of medicinal suggestion are found.

Even before them, Pythagoras extolled the efficacy of anise held in the hand in combating epilepsy. Hippocrates says that all sorts of lichen are cured by the skin of the viper. Herophilus considered all plants, even the most simple, as endowed with special and very great virtues. Alexander of Tralles, whom Kurt Sprengel considers as one of the most worthy authors of the fifth century, extols from his own experience the use of castoreum in soporific fevers and in a number of other affections.

Later, in the medicine of the Arabians, the properties attributed to products the most varied derived from plants and animals multiplied still more. Rhazes advised in several cases the internal use of red coral and precious stones. Jean Gaddesden, professor of medicine at Merton College, Oxford, in the beginning of the fourteenth century, pretended, by making use of fennel and parsley in wine, to have cured a man, blind for

¹ The forms of psychotherapy not taken up in the present article will be dealt with in others of this series.

twenty-five years. Jean Platearius [middle of the sixteenth century] advises, when a patient is attacked by stubborn vomiting and can keep nothing in the stomach, to bind his limbs before administering any medicine. Antonio Guaineri of Pavia said that in obstinate convulsions a fever should be induced, a condition the Germans attained by placing a patient between two fires. This therapeutic measure involuntarily recalls the memory of Panurge, put to torture by the Turks. He declares, "This roasting cured me entirely of sciatica of seven years' duration, on the side where my roaster, falling asleep, let me burn."

As medicine has always clamored more or less for heat and cold alternately, Valescus de Tarenta of Portugal describes having cured violent and general convulsions by throwing pails of cold water on the bodies of patients and then having them rubbed with oil. Therapeutics, like manners, are to-day less violent, being content with a modest siphon of Selzer water.

Some Famous Remedies that Worked by Suggestion

BUT the most beautiful examples of medicinal suggestion, of unconscious psychotherapy, are furnished by the success of the following famous remedies: theriaca, orvietan, bezoar, and antimony, which were used for years and even centuries, effecting cures until the day their inertness was discovered.

Theriaca, invented by Andromachus of Crete, physician of the Emperor Nero, had from its very origin such a success that Antoninus had it prepared in his palace, and took a portion equal to the size of a bean every day while fasting. It was a panacea for all infectious diseases, poisonings, fevers, etc. With divers vicissitudes theriaca survived the ages and it was found more in vogue than ever from the sixteenth to the seventeenth centuries. "It was willingly taken at court to gain protection from the thousand petty miseries which troubled existence, and good results were obtained."

Gratier has collected quite a series of facts on the use of the viper in therapeutics; he shows it as the faithful companion of

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Æsculapius from the very beginning and largely sharing in the reputation and celebrity of theriaca, orvietan, and many other secret preparations. Neither was it despised in the natural state, if we can call it such, as Mme. de Sévigné, in a letter to Mme. de Grignan, Oct. 20, 1649, said: "Mme. de La Fayette takes soups of vipers which restore her soul and give strength to the eyesight; she believes that it would be excellent for you." Is this not an example of the saying of Pascal: "Skeptics are the most credulous"; because we are not ignorant of the fact that Mme. de Sévigné, who never passed through a city without taking the advice of the "most ignorant of that region," nourished a sweet skepticism in regard to medicine and cried out after a consultation: "Ah! What I wish them, those doctors! What a pretence is their art!"

It would be tedious to multiply the examples of medicinal suggestion which have abounded at all times, and to accumulate observations, which from the cure of patients show credulity of both patient and physician and the *value* of deer's horn, theriaca, castoreum, antimony, etc. And even at the present time how many "nostrums" there are which come to life and die every day, but not without offering some miracles due to their action in which their own properties count for nothing.

This wish for imposition, this intentional fraud, has had its adepts at all times, and, moreover, often very honorable ones. By the side of charlatans of every degree, — for whom to lay hold of patients, in accordance with the saying of La Fontaine, is the secret of all medicine, the aim of every system of therapeutics, — observing practitioners have always believed that imaginary ailments should be met by remedies of like nature.

The laws of *similia similibus* dominate this system of therapeutics, of which the mica panis pill is the most serious representative: innumerable cures are due to it even among crowned heads, for even Corvisart, who did not scorn it, had a fine success in using it for the Empress Josephine. To-day the system still holds its own in spite of the severe competition pills of methylene blue are causing.

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The scope of success in medicinal suggestion are many: they depend on the character of the patient which is not always in accord with the degree of culture and on the desire and confidence of every one.

They also depend largely on the nature of the medication, which varies the suggestion more or less rapidly. Finally the suggestion and suggestion power mentioned in these medicines differing the more of suggestions more or less invulnerable or more or less vulnerable. Furthermore the nature in which the suggestion operates the medicine is not to be overlooked. Let a physician succeed in introducing it in the muscles and the power of the drug will increase accordingly. It is of which Louis XIV was afflicted by a violent rheumatic fever and after a long consultation of his physicians took immediately and recovered the influence of the drug was large and in various forms administered for a long time.

To-day total suggestions have disappeared at least in France, but the practice of medicinal suggestion is just as large as ever.

Many employ it willingly, because, as Pons said, "it is not subjected to doubt by the will of resistance and it has the *medium* of the imagination which the action induced by intellectual suggestion." Every one uses it unconsciously every day, and even for an inert mind it is relatively easy to make the part that may be attributed to it in the success of all therapeutics.

In throwing a last glance at all these remedies which have caused us amusement, we cannot help thinking that perhaps several of them may not deserve disdain. Doubtless in the future the investigators will bring forth some of them from oblivion and give them a moment of fashion, while other medicines that we prize to-day will go to populate them in the neglected pharmacopoeia. This is the general history of therapeutics: it is we ourselves who give to many medicines their efficacy, and their good effects persist as long as the faith of physicians and patients in their power.

Editor's Summary

Camus and Pagniez in this chapter on the History of Psychotherapy, after drawing attention to the fact that often where one physician obtains a cure of a disease by a remedy that he has faith in, a confrère, considering both the illness and the remedy, sees in the cure only the effect of an unconscious suggestion, ask the question, "Can it be affirmed that psychotherapy is contained wholly in suggestion, conscious or unconscious?" They conclude that it is not contained in suggestion alone, but persuasion and reason are effective for mind cures.

They note that psychotherapy in its conscious manifestation appears to be modern, yet in its unconscious often involuntary manifestations it has played a part in medicine since the earliest ages. They add that physicians have done by instinct from time immemorial what moralists and religious men have done methodically and deliberately, in directing the conscience and building up the character of their followers to struggle against false ideas, fears, hopelessness, and aboulia. So that, in fact, psychotherapy merely seems modern, due to conscious use of it but recently by modern physicians.

Recapitulating, Camus and Pagniez state that psychotherapy was the chief factor in (a) the healing qualities of many of the drugs administered in early times; (b) in many of the cures called miracles; (c) in cures by hypnosis and suggestion; and (d) in cures due to persuasion.

On the other hand, they give to our age the credit (a) of determining the mechanisms of psychotherapy, (b) of specifying their usage, and (c) of grouping together the special rules and indications pertaining to it.

They note many queer prescriptions found in old treatises that in themselves could have had no value apart from psychotherapy, such remedies as, for instance, Mme. de Sévigné's soup of vipers. Camus and Pagniez say that the powerful effect that rare drugs sometimes have is due to the fact that the imagination is more or less forcibly excited by them, — their composition being mysterious and repugnant, — and that every success credited to them greatly increased the power of the drug.

They intimate, in concluding, that it would not be surprising to see some of those old remedies brought back from oblivion to enjoy again a moment of fashion, nor to see some of the medicines, prized highly today, relegated to the limbo of neglected pharmacopœia.

Nothing in psychotherapy is more surely a commonplace than that it is as "old as the hills." In Number 1 of this Course, page 2, in our announcement we said, "Psychotherapy is as old as the beginnings of medicine." In that same number, page 11, Dr. Richard C. Cabot, in his

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article entitled, "The American Type of Psychotherapy," under the cross heading, "The New Development of Psychotherapy," says:

"Now if you speak to the man in the street about mind cure of the type which I have just been describing," — Dr. Cabot referred to what are called functional cases, — "and especially if the man in the street happens to be a doctor, he will tell you that there is nothing new about this — that all sensible physicians have been doing work of this kind since the world began; in fact that no doctor could ever succeed in his practice if he did not take account of the mental and moral conditions that complicate illness in such a large number of cases," etc.

Again, in a note on page 42 of Number 1, and preceding Dr. Loring W. Batten's historical account of psychotherapy in the Old Testament, we noted that while religious therapeutics are as new as the Emmanuel Movement they also are as old as the Bible and — to accept the suggestion of Dr. Batten in his article — as old as some of the methods of Adam.

Collateral Reading

Extra-medical Psychotherapy. — The historical side of psychotherapy has frequently attracted attention because of the great age of those practices in which its principles were employed and the unconscious way in which they were carried out; giving to modern applications a seeming novelty.

Dr. Lewellys F. Barker, successor to Professor Osler as professor of medicine at Johns Hopkins University, has alluded to the prevalence of psychotherapeutic practices outside of the medical profession. His remarks occurred in an address before the Association of American Physicians at Washington, D.C., May 12, 1908, printed in the *Journal of the American Medical Association*, August 1, 1908. From this we quote:

"A striking fact about several forms of psychotherapy is their origin, at least in germ, outside of the ranks of the medical profession. Isolation, for example, arose in antiquity as a self-inflicted discipline in the practices of the anchorites, hermits, and monks, who withdrew themselves from society into deserts or solitary places, sometimes as a penance, but more often to avoid the temptations of the world, to devote themselves to contemplation and religious exercises, and to attain to a peace and calm otherwise denied them. To many men and women there come times in life when separation from the world seems to be a necessity; they feel that they must get away from people, from the duties of society, from an unsatisfactory environment. The "retreat" of the Catholic Church meets this need for some. The summer vacation in the wilderness satisfies it for others.

"Psychotherapy by suggestion was largely extra-medical in source.

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It began in the form of secret remedies of quacks, in the performance of miracles, in the use of charms, philters, talismans, amulets, phylacteries, and mezuzahs, and in application of magnets and metals. The laity have been fertile in devising of impressive suggestive measures from the earliest times down to the era of Perkins tractors, proprietary medicines, and electric belts.

"Even persuasion, the last psychotherapeutic method to be thoroughly employed consciously by physicians, dates back to the stoic philosophers, with Seneca as a type, and to the confessors and moral directors of the church. These men worked out excellent methods for helping the aboulie and the victims of morbid scruples to overcome their inertias, their doubts, and their fears.

"In the United States, the development of psychotherapy outside the medical profession has been perhaps as notable as inside it. Nowhere, unless in Germany, have 'patent' and proprietary medicines been more in vogue. In the widespread mind-cure movement here we see a development of great importance, designated by one of our leading psychologists as the only decidedly original contribution of the American people to the systematic philosophy of life. The 'new thought' advocates and the Christian Science healers combine suggestion in the waking state with more or less persuasion; in the 'Emmanuel Church movement' (which through medical aid separates so-called organic from so-called functional cases) the clergymen who treat the functional disorders use suggestion in the waking state, persuasion, and also, to some extent certainly, suggestion in hypnosis."

In our series of articles relating to the historical side of psychotherapy the various historic types of mental treatment touched upon by Dr. Barker will be fully dealt with.

The Next Article

EDITOR'S NOTE. — Dr. David Heagle, in the following pages, views psychotherapy and more simple phases of healing, as practiced in the earliest times and to-day, from a different view point from that of Camus and Pagniez, a translation of whose chapter, "Psychotherapy of Drugs," appears in this Volume. He looks forward to the not long delayed time when science shall have discovered more about the still but partly known laws that control the action of mind upon the body. His purpose in this article is to interpret the many cures undoubtedly effected at intervals at Treves, the old Roman city near the Moselle River, and now called Trier, and at Lourdes, in the south of France. He emphasizes again the fact that it is faith that cures — "real faith, even though it acts subjectively."



Historical Comment on Mental Healing¹

BY DAVID HEAGLE, PH.D., D.D., CHICAGO

THE new science of mental therapy is as yet in a state of great incompleteness. Only a part of the many facts believed to be connected with this subject have been discovered, only a few of the laws controlling the action of mind upon the body have been ascertained and formulated; still there exists at present sufficient knowledge with regard to this topic to constitute what may be called a real science, or one that has already made a good beginning, and has before itself the promise of much enlargement and perfecting. Some one has said that the fifteenth century distinguished itself especially by the discovery of a new material world, or the continent of America, and that, in like manner, the twentieth century promises to distinguish itself by developing a new world of mind, or a sphere of intellectual reality, never before fully realized.

Now, looking over the entire history of this new science from its very commencement to the goodly degree of attainment at present made by it, one can easily see that this history naturally divides itself into two parts, — a period that is more experimental and unscientific in its general nature, and another period that is more scientific and rational in character.

Origin of the Science

JUST where, in human history, the unscientific or experimental period of this new science really began, it would be difficult to determine; * still, judging from the principles of human nature,

¹ See note, "The Next Article," on preceding page.

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that beginning must certainly have taken place far back in the very earliest experiences of our race. When some member of any human family, living away back in those old or primitive times, happened to be afflicted with any special disease,—such as headache or some derangement of the stomach,—then, by the law of sympathy, some other member of this same family, or it may be some particular friend of the afflicted, would naturally be moved to do something, if possible, in the way of accomplishing a cure; and among other expedients to which he would resort, might be an expression of hope or faith as to a recovery of the patient. Or he would, perhaps, suggest that, in the material remedies which were being used, there was an efficacy which would surely accomplish a cure. Proceeding in this way, that good friend or relative of the person diseased would certainly not only be helping to a recovery, but he would also be illustrating, by his counsel and good advice, at least some of the principles of mental therapy. For, when reduced to the last analysis, this new science consists, more than in anything else, simply in giving good advice, or in correcting any wrong notions that might be held by the patient; or it might also be in stimulating him to the exercise of will or hope with regard to a recovery. These are certainly some of the principles of the new science of mental therapeutics; and now as far back in human history as the working of these principles can be traced, so far back also must be located the beginning, or origin, of this science. That is to say, it must be located away back at the very commencement of organized human life, or with the institution of the first human family, or the first establishment of friendly relations between man and man.

Ancient Superstitions and Credulities

AND now turning to the actual history of this science, as it has appeared among the various nations of the world, it needs to be observed, in the first place, that probably all the oldest or primitive peoples of history have been affected more or less with superstition and credulity.* They have not only believed in

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the powers of nature, but they have also believed in all kinds of supernatural agencies,—in magic, incantations, charms, amulets, sacred relics, occult influences, sorcery, witchcraft, being in league with the devil, and in every other sort of foolish potency by which it was conceived that a cure of disease could be wrought. Consequently it must be said that, inasmuch as credulity is really an agent for the healing of disease, many actual and wonderful cures have been wrought in this way. So far indeed has this work of healing people by credulity gone that even charlatans have practiced the method, and sometimes have achieved most wonderful results. Among the ancient Egyptians, it was the regular practice of the magical doctors,* when making a prescription, to add to it some formula of superstitious rites, or perhaps of prayers addressed to a heathen divinity; the idea being that, by using such superstitious means, evil influences exerted by bad spirits would be overcome, or the benign help of good spirits would be evoked. And thus it was not only proposed to heal disease, but the probability is that, in many instances, real cures were thus effected.

The same or similar superstitious practices were employed by other ancient nations, such as the Babylonians and Assyrians, and even by the Greeks and Romans, and among all these peoples doubtless, very often, most remarkable cures were accomplished in just this way.

Modern Miracles of Healing

MOREOVER, there are good illustrations of the power of credulity, for the healing of disease in our own country; in the work of the "medicine men"* among the Indians, for example, or of the "voodoo doctors"* among the negroes in the South. Or to take more conspicuous illustrations of this method of healing people, when made use of, as we may say, on a large scale, attention needs only to be directed to some of the famous sacred resorts in Europe, such as Treves and Lourdes;* where occasionally multitudes of people are healed of many diseases, simply by looking at some holy garment, or by using water drawn from a sacred

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spring, — this spring being reputed to have been sensitized, or miraculously affected with healing virtue, years ago, by the Virgin Mary. During the summer of 1891, when the "Holy Coat"* at Treves was last publicly exhibited, it is estimated that fully six million people visited that city, coming from every part of the world; and quite a number of remarkable cures were reported as having been accomplished. The crowds every year at the little town, or grotto, of Lourdes, in southern France, are very great, numbering even hundreds of thousands during one season; and the multitude of cures reported to have been accomplished there in some way, by connection with that sacred spring, is truly astonishing.

But what are we to say with respect to these cures effected, as it would seem, by the power of credulity? We must simply admit the undeniable reality of these cures as facts; and then if we undertake to interpret them, we shall learn a great truth connected with the science of mental therapy, — of all known powers existing in our world for the healing of disease, *faith — real faith, even though it acts subjectively* — is one of the greatest.

Editor's Summary

In his article Dr. Heagle has brought out:

1. As a science mental healing is not complete, but that it has progressed beyond the unscientific and experimental stage, and that there exists sufficient definite knowledge to warrant its being called a science.
2. In its origin, psychotherapy reaches back into the very dimmest beginnings of recorded life. And that it has been present, unconsciously and in hidden ways, in life ever since.
3. That in darker ages psychotherapy was made use of by priests, who thought they were merely performing religious or superstitious rites, or propitiating spirits.
4. That at Treves and at Lourdes wonderful cures are effected even to-day by the sight of a coat or a taste of a spring.

Notes and Collateral Reading

74. *Origin of Healing.* — No one man first discovered the medicinal herbs; probably the discovery of all the virtues of a single one of them

[illegible][illegible][illegible]

... IF THE NECESSARY TRACKS
... FOR THE PROTECTION

[illegible]

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lame, the blind and the deaf, the victims of almost every incurable disease that afflicts humanity, brought thither, that they may be healed. And what is far more wonderful, he will see not a few of these depart in health and strength, cured of those ills that the skilled physician pronounced absolutely incurable." — *From R. F. Clarke's* [Catholic author] "*Lourdes, Its Inhabitants, Its Pilgrims, and Its Miracles*," pp. 5, 6. See also *Lasser's "Hosioiro Medicaie"*; H. John, "*The Blessed Virgin in the 19th Century*"; Zola's "*Lourdes*" (a novel).

77. *The "Holy Coat" at Treves.* — For an account of the miracles wrought in connection with the exhibition of this sacred relic, see *Clarke's "Pilgrimage to the Holy Coat of Treves"* (1892), also *Korum's "Wunder bei der Ausstellung des Heiligen Roekes zu Trier"* (1894).

See also *Prichard's "Where Black Rules White"* [in Hayti], pp. 74-110; likewise *Dr. J. M. Buckley's "Christian Science and Other Superstitions,"* p. 32.

The Next Article

EDITOR'S NOTE. — Science shattered the phrenologist's claims but it replaced his vague guesses with more marvelous fact. Professor Woodworth in the following article sketches some of the discoveries of science concerning the course of nerve fibers and the localities in the brain that govern certain sorts of bodily and mental acts. He takes up the localization of functions of the nervous system. While a knowledge of the physiology of the nervous system in general is necessary to the pursuit of studies in psychotherapy, this article touches upon a phase of this knowledge which has special significance. This is the physical process in the formation of habits, a physiological explanation that will find an important application later in the course.



from the internal organs. From many of these last no recognizable conscious sensations arise in normal conditions; their usual influence may be confined to the lower and probably unconscious centers of the cord and medulla, although they may contribute to the general bodily feeling of well- or ill-being.

Motor or outward-conducting fibers pass from the nerve centers to nearly all the muscular tissues of the body — to the muscular walls of the internal organs as well as to the muscles that move the bones. The heart and the muscular walls of the arteries are supplied with two sets of fibers — an exciting set, which causes the arteries to contract and the heart to beat faster, and an inhibiting set, which slows the heart and dilates the arteries. Outgoing fibers pass also to many of the glands, including those which produce perspiration, saliva, and the gastric juice. The gland cells of those great chemical organs, the liver and kidney, seem, however, not to be supplied with nerves; whatever influence is exerted upon them through the nervous system comes by the regulation of their blood supply. Either directly, by nerve fibers controlling its activity, or indirectly, by fibers controlling its blood supply, every organ in the body is under the influence of the lower nerve centers and, through them, under the influence of the brain.

A word may be said here to illustrate the relation between psychotherapy and the general practice of medicine. There are these two means of communication between the various organs of the body; the nerves, on which we have been insisting, and the blood. The blood serves not only to carry food and oxygen from the intestines and lungs to the various organs, and waste products from the organs, but it also maintains a general chemical equilibrium between them all. It distributes substances originating in one organ, or entering the body through it, to other organs. Thus it distributes the "fatigue products" which originate in a hard-worked set of muscles so that the fatigue is general and not simply local. It spreads poisons or germs that enter the body at any one point, and thus becomes an agency in producing disease and death. But it also distributes the enzymes which are necessary to life, and the antitoxins developed by the body for combating the germs of

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disease. It distributes too, drugs which are introduced into the body as aids in its struggle with disease.

Thus in the chemical treatment of disease — the treatment by drugs and diet — the physician relies on the blood to carry the remedial substance where it is needed. The nerves carry no chemical substances, but only stimuli to activity or to rest. It is when the case calls for control of activity and rest that treatment by psychotherapy, — or, more broadly speaking, by “neurotherapy,” the acting on organs through their nerves, — would seem to be the proper measure.

Reflex Centers, Automatic Actions

FIBERS from the sense organs and the muscles enter the centers along the whole length of the spinal cord and of its continuation in the base of the brain. Usually, the sensory and motor fibers from the same general region of the body enter the cord or brain at about the same point, and make connections with each other in the neighboring gray matter, which thus becomes a local reflex center. If, for example, the spinal cord be cut across low in the back, that part of it which receives the sensory and motor nerves from the legs and the lower part of the trunk is entirely severed from nervous connection with the rest of the body. The brain has no longer any control over the legs, and no stimulus applied to the sense organs in the head or upper part of the body produces any reaction in the legs. But the skin of the legs and lower part of the trunk, containing the sense organs or ends of sensory nerve fibers, still has nervous connection, through the centers in the bottom of the cord, with the muscles of the same region; and the muscles react to stimuli applied to these sense organs.

The legs will be drawn up when the foot is pinched, and pressed down when smooth pressure is applied to the soles. The most fundamental movements of the legs are thus possible with only the local centers in use. Similarly, the fundamental actions of certain internal organs can be reflexly elicited, although only the local center is left. Yet, in an uninjured animal, the same

movements are under the control of the brain, which can either excite or inhibit them.

Relation of the Brain to the Spinal Cord

IT thus appears that the brain has no direct connection with the muscles, but that it acts through the spinal centers. It does not supersede these, but takes command of them like a general who issues no direct commands to his soldiers—here the muscles—but commands the colonels, who in turn give orders to those who finally execute them. The relation of the brain to the spinal centers is much like that of the cardiac center to the heart. The heart can act of itself; what the center does for it is either to slacken or to hasten its action. So the lower or reflex centers can act by themselves in accordance with the sensory impulses which they receive; but the brain can either reinforce or check their action.*

The inhibitory power of the brain is, however, limited; for if the sensory impulses reaching the lower centers are sufficiently strong, these centers break away from higher control, and the reflex occurs in spite of the most earnest desire that it shall not. Familiar examples of this fact are seen in our inability to avoid starting at a sudden noise, if it be sufficiently sudden and loud, and in the results of attempting to repress indefinitely such reflexes as winking or breathing. Sometimes the inhibitory influence of the brain is exerted to an abnormal and unfortunate extent; a function which, if it could only be left to itself, would go on properly, is continually interfered with by the fear that it may not occur, by other untoward mental influences. The first step towards reinstating the normal function is to remove the untoward mental influences.

Action of the Medulla and the Cerebellum

INSIDE the skull the cord is continued upward in what may be called the brain stem, the lowest part of which is the medulla. The centers here are largely connected with the sensory and motor

* See note at end of article.

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fibers, which pass into or out of the medulla by that important nerve, the vagus. As this nerve brings in the sensory fibers from the lungs, it is natural that the breathing center should be located in the medulla. As it carries out the inhibitory fibers to the heart, it is natural that the heart-regulating center should be there. It also appears that whatever influence the nervous system exerts on the movements and secretions of the stomach—and this is by no means slight—is centered in the same general region.

Above the medulla there is an enormous outgrowth from the brain stem, containing a large quantity of gray matter, with many richly branched cells. This is the cerebellum, the function of which is still but partly understood. Its loss in man does not seem to produce any loss of conscious sensation, nor of any intellectual or emotional function. The results of its loss are predominantly motor—tremors, weakness, loss of firmness and readiness of muscular action. It would seem to be a center in which the total dynamic condition of the body—the strains exerted by the muscles from within, and the pushes and pulls exerted from without—is at every moment brought to a focus and reflected outward upon the muscular system, so that this shall act as a unit, and so that the cerebrum, in playing upon it, may always find it a well-tuned instrument. The cerebellum, however, is not absolutely essential to fairly efficient movement, for cases have occurred in which post-mortem examination revealed an absence of the cerebellum in an individual who had presented nothing noticeably abnormal during life.

The Uses of the Cerebrum

IF we allow all of the single local centers of the cord and brain stem to remain in connection with each other and with the sense organs and muscles, and inhibit the cerebrum, we find that an animal in that condition can execute not only local reflexes, but coördinated movements of the whole body. Practically, then, all the movements of which the animal is capable can occur without the cerebrum.

The location of the cerebrum, as an outgrowth of the brain stem near the entrance of the nerves of sight and smell, and in close connection with the auditory nerve, has suggested that this organ is fundamentally a center through which these senses act upon the body. These have been called "projicient" senses, because they give information of objects at a distance; and the reactions to which they lead are of a *preparatory* nature, in that they accomplish nothing of direct value to the animal, but make him ready for final reactions, such as devouring prey which has been seen and stalked. The ability to make preparatory reactions implies a degree of leisure or freedom from the immediate necessity of making reactions of direct benefit. Accordingly, one great function of the cerebrum is to hold such immediately beneficial reactions in check while the preparatory reactions are being made, or, in other words, to exert an inhibitory influence upon the lower centers.

Ability of Cerebrum to make New Combinations; Habit Formation

A GAIN, preparatory reactions are exceedingly varied, and while they do not require any new fundamental movements, they call for numerous different combinations of them. The cerebrum has the power of combining the fundamental movements into very complex acts.* Further, the wider the range of surrounding objects to which the animal can react in this preparatory way, the less likely it is that all the necessary adaptations of movement to circumstances can be provided ready-made by the inborn connections of nerve fibers. Each individual must adapt himself to his particular surroundings; and the wider and more detailed the information afforded by the senses, the more chance there is for these individual adaptations. An individual cannot rely entirely on the instincts of his race; he must learn from his own experience.

This introduces the new requirement on the nervous system, that it must provide for the *formation between nerve fibers of new*

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connections, which shall give rise to new reactions and to individual habits. The power of habit formation or "association" will be considered in a subsequent article on Psychology. It does not seem to be possessed to any great extent by the lower centers of the cord and brain stem, but is abundantly present in the cerebrum of the higher animals.*

Gall and the Phrenologists

THE gray matter of the cerebrum lies on the surface, covering the white matter like bark on a tree, from which circumstance it is called the *cortex*. The first attempt to localize different functions in different parts of the cortex was made by Gall and the other early phrenologists. Gall was accustomed from his youth to notice heads of peculiar shape, and the mental peculiarities of individuals having such heads, and from these data he gradually evolved a system of correlations between the prominence of certain parts of the skull and the development of certain mental traits. Prominence of a certain portion of the crown seemed to him associated with a high development of reverence; prominence just above the eye, with a keen sense for number and form; prominence at the back of the skull, with strong sexual passion; and many other mental and moral traits were similarly localized. Gall's method of investigation suffered from the defect that the shape of the brain does not correspond closely with that of the outside of the skull, and from the further defect that it was statistically weak, being founded on the observation of comparatively few striking cases, instead of on the measurement of a number sufficiently large to establish such correlations.

Localization of Functions of the Cerebrum

THE physiologists of the day looked into Gall's doctrine, and rejected it. But they went to the other extreme of asserting that the brain always acted as a whole, and that one part of it

did not differ in function from another. This doctrine remained orthodox for many years, and was first shaken by Broca's observation that the function of speech was dependent on the integrity of a certain small portion of the left hemisphere of the brain (the "third left frontal convolution"), which he therefore declared to be the speech center. Injury to this center caused loss of the power of speech, or "aphasia." Later observers showed that Broca's speech center did not have exclusive control over all the activities of speech, since the power of understanding what others say to us, and even of rightly choosing our own words, depends on a portion of the cortex somewhat farther back, in the "temporal lobe." In very recent years, indeed, the assertion has been made that this latter is the only true speech center.

The optic nerve, running in from the eye, leads rather directly to a small area at the back of the brain; when this area is destroyed, sight is lost. There is an area in the side of the brain for hearing, and one towards the front for smell. The sense organs in the trunk and limbs seem to be connected with a zone extending from the top of the brain down along the sides, the legs being connected with the uppermost part of this zone, the trunk with the next, then the arms, the neck, and the head, in descending order. Just forward of this zone is the "motor zone," the corresponding parts of which are connected with the muscles of the legs, trunk, arms, neck, and head, in the same order as above. When the motor area for the legs is stimulated, movement of the legs results; when it is destroyed the legs are paralyzed.

But in the meantime Broca's more direct and reliable method of observing the loss of function that results from injury or disease of small parts of the cortex has led to the localization of a number of functions besides that of speech. Each sense organ is represented by a certain small portion of the cortex, and each group or combination of muscles is similarly represented.

Besides the functions of sensation and movement, a very few

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others have been localized in the gray matter of the cerebrum. If portions near the area for vision are destroyed, the individual becomes not blind, but unable to recognize words, or in other cases objects that are seen. Destruction of regions surrounding the hearing center make one not deaf, but unable to recognize words or melodies that are heard. A center for writing has also been located with some probability, near the motor center for the hand.¹ These higher centers are located in the left hemisphere of the brain, the part which, because of the crossing of fibers, is connected with the right side of the body. These various parts of the cortex are abundantly interconnected by nerve fibers, called "association fibers," some short and connecting neighboring parts, others long and connecting distant parts of the same hemisphere, or running across from one hemisphere to the other. It appears likely that when we recognize a familiar object, the nerve impulse coming from the sense organ runs first to the small area of the cortex directly connected with that sense organ, and that this area, in turn, arouses, by association, fibers of the neighboring part which is concerned with the recognition of that sort of object. In the same way, when we perform a movement that has been learned, the higher coördinating center which has learned the movement, first arouses by association the fibers of the motor area connected with the member to be used; this area acts, in turn, through the lower centers of the cord and brain stem, upon the muscles.

When all of these centers for the senses and for the perception of objects, for movements and for the learned combinations of movements, are marked out on the surface of the brain, large areas still remain unaccounted for.* At present we can only conjecture that these "association areas" resemble in function the centers for perception and for learned movements, but are of a higher order—less closely connected with sensation and movement. Through them we see the broader meanings of things, and combine our movements into acts and consistent conduct.* They stand at the top of the hierarchy of centers, but by no

¹ See article by Dr. Simpson, in No. 1 of the course, p. 81. — *Ed.*

means stand entirely aloof from any bodily function, to which their relations may be indirect, but none the less real and effective.

Editor's Summary

The tracing of nerve fibers and the localization of functions of different parts of the nervous system are the chief topics dealt with in Professor Woodworth's article. The main points he makes may be brought out thus:

1. Nerve fibers are grouped into, (a) sensory, or inward-conducting, fibers which serve the purpose of sensation, (b) motor, or outward conducting, fibers which convey impulses resulting in movement.

2. Nerve centers which respond automatically to stimulation are known as reflex centers. They are found chiefly in the spinal cord and in its continuation at the base of the brain. The ordinary movements of the limbs and the actions of certain internal organs are to a considerable degree controlled by such centers.

3. Professor Woodworth then shows that while these lower centers can act by themselves, the brain, to a certain extent, may reinforce or check their action. The brain acts through these spinal centers in controlling the muscles.

4. In the medulla oblongata are the centers that control breathing and heart action.

5. In the cerebellum is located the center for coordination of the activities of the muscles of the body as a whole.

6. The cerebrum contains the centers which have to do with the management of actions with which we respond to circumstances that require thought. It has the important function of inhibiting or restraining harmful action of lower centers.

7. In the cerebrum, Professor Woodworth points out, is located the power of making new combinations. It enables us to adopt actions to experience, to form habits and modify them.

8. Among the better known special centers located in the cerebrum, Professor Woodworth mentions the centers for the various senses and for conscious movements; the speech center, the writing center, and those for recognizing audible and written speech.

In connection with the higher brain centers of the cerebrum, Professor Woodworth describes the association fibers which inter-connect various parts of the brain and are believed to be of peculiar significance in thinking. The centers associated with thought in its higher and more complex forms while not definitely located are also placed in the cerebrum.

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impulses. When we reflect that every excitation works through release of tension in organic cells, and that the result of this release in the individual cell may be connected in the cerebrum with results similarly obtained from millions of other cells, we grow giddy at the thought of the combinations which are here possible.

— H. Höffding, "*Outlines of Psychology*," 1892, p. 40.

87. *Psychotherapy and the Cerebrum.* — It is gratifying to see certain of the psychoneurotics who have been, perhaps, miserable invalids for years, burdens to themselves and to their friends, reclaimed by suitable means, made well again and equal to normal life. The limitations of psychotherapy are definite; they are given by the capacity of the individual brain for education and by various physical and social factors. It is matter for satisfaction that its field of application is as broad as workers on the subject are finding it to be. It remains for the future to reveal to us all the opportunities of which we may take advantage in extending and improving the activities of that great organ of adaptation in our bodies — the cerebrum. Here lies a fruitful territory for clinical research.

— "*Journal of the Am. Med. Assoc.*" Aug. 1, 1908.

89. *Localization of Brain Centers leaves much Unaccounted for.* — While it is still disputed how far a localization of the special sensory functions exists in the cerebrum, the disputants agree that the higher mental manifestations are not tied to definite cerebral tracts. Both Goltz and Munk unite with Flourens in thinking that the most important cerebral functions, the actions from which we conclude intelligence, feeling, passion, and natural impulse, cannot depend on definite sections of the cerebrum.

— H. Höffding, "*Outlines of Psychology*," 1892, p. 41.

GLOSSARY

"The New Art of Healing," by Max Eastman, *Atlantic Monthly*, May, 1908; "The Powers of Men," by William James, *American Magazine*, November, 1907; "The Spiritual Unrest," by Ray Stannard Baker, *American Magazine*, December, 1908, January, 1909; "Psychotherapy, with some of its Results," by Beatrice M. Hinkle, M.D., *Journal of the American Medical Association*, May 9, 1908; "New Phases in the Relation of the Church to Health," by Richard C. Cabot, M.D., *Outlook*, February 29, 1908.

A series of articles by Rev. Elwood Worcester, D.D., Ph.D., in the *Ladies' Home Journal* (these began in December, 1908).

A series of articles are appearing in *Woman's Home Companion*.

Glossary

For terms not found below, see Glossary in the earlier issues of the Course.

- Alterative*, an agent for producing a salutary change in a disease by improving the nutrition without other marked action. The chief alteratives are cod-liver oil, arsenic, iodine, etc.
- Amygdaloid nuclei*, a projection of gray matter at the lower end of the descending horn of the lateral ventricle of the brain.
- Anti-toxins*, any defensive proteid formed in the body as the result of the implantation of a poison, and acting as a neutralizer of the poison. Anti-toxins of various diseases, derived from the blood serum of animals that have been subjected to the disease, are used as therapeutic agents.
- Auto-suggestion*, the apparently spontaneous occurrence in the mind of ideas derived from impressions received in the hypnotic state. The term is also applied to a peculiar mental state often occurring after accidents in which the will and judgment are partially obscured and suggestions are easily received, so that the slightest injury to a part induces a hysteric paralysis or other disability.
- Basal ganglia*, collections of nerve cells at the base of the brain.
- Bexoar*, a stony substance found in the intestines of herbivorous animals.
- Brain stem*, that portion of the brain not included in the cerebrum and the cerebellum. It consists chiefly of the pons Varolii and the medulla oblongata.
- Cardiac center*, nerve center pertaining to the heart.
- Caruncle*, a fleshy excrescence, also the comb or wattles on the crest of a bird.
- Cleastral*, innermost layer of the cortex.
- Corpus callosum*, a band of white nerve tissue connecting the hemispheres of the brain.
- Dynamic*, manifesting force.
- Enzymes*, a chemic, or non-organic, ferment formed within the body.
- Excretions*, discharged waste matter.
- Fissures*, deep furrows in the surface of the brain that involve its entire substance.
- Frontal lobe*, the lobe or crosswise division of the hemispheres of the brain lying in front.
- Gastric*, pertaining to the stomach.
- Gland*, an organ that separates any fluid from the blood.
- Lichen*, a diffuse, dry, red, papular eruption that tingles and prickles.
- Lobe*, a term applied to poorly defined areas of the cerebrum or forebrain.
- Mezaxa*, a parchment inscribed with the decalogue and the name of the deity.
- Mucous membranes*, membranes lining the canals and cavities of the body which communicate with the open air, such as the mouth, nose, throat, etc.
- Optic nerve*, nerve for manifesting sight impressions.
- Orvietan*, a counter-poison. See Scott's "Kenilworth," ch. 13.
- Tendon*, the fibrous cord of connective tissues in which the fibers of muscles end and by which a muscle is attached to a bone or other structure.

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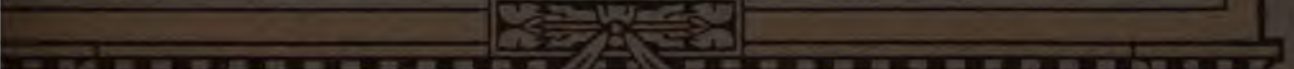
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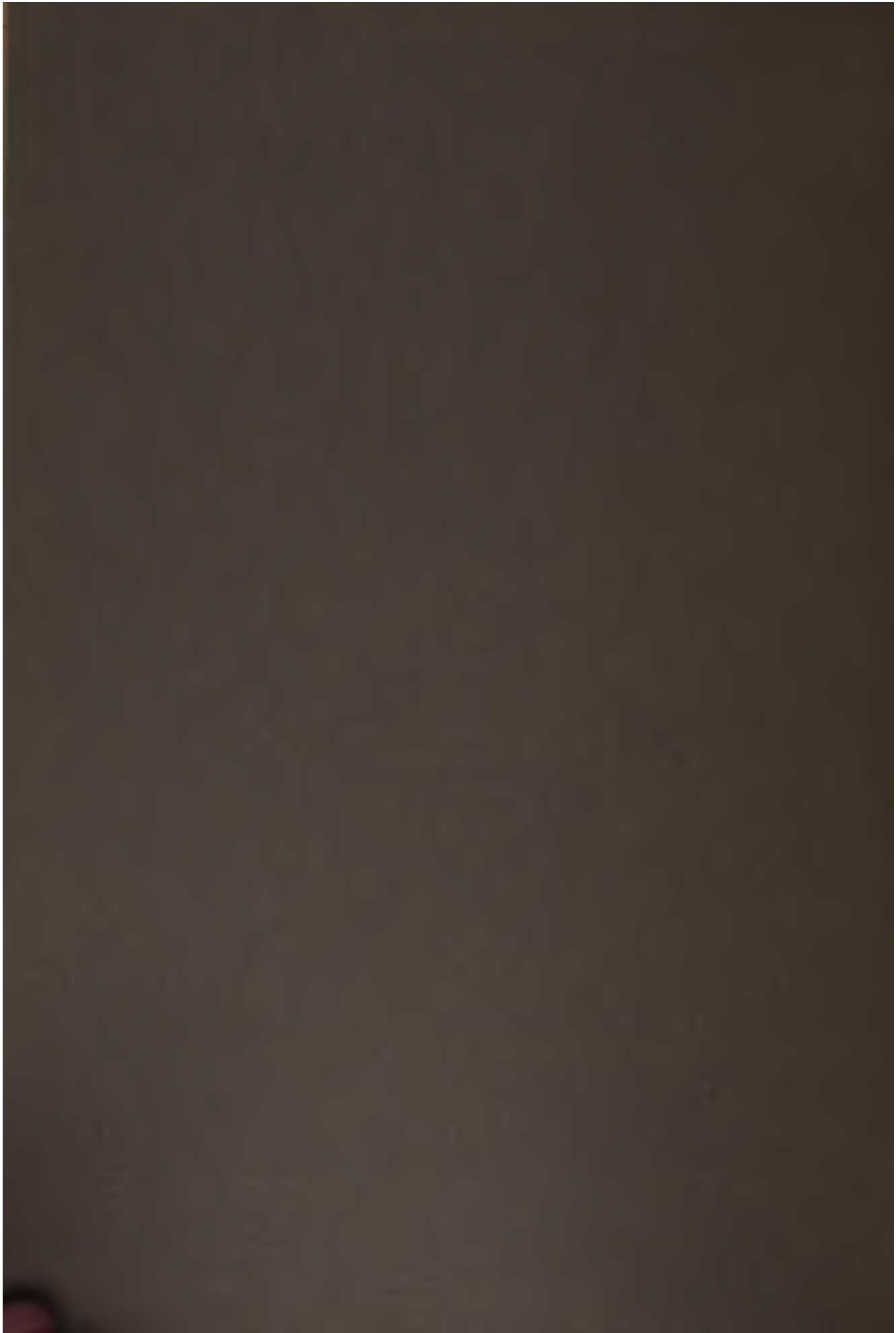


VOLUME I—NUMBER 4

"This is the great error of our day
in the treatment of the human
body, that physicians separate
the soul from the body."—Plato.



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PSYCHOTHERAPY

A COURSE OF READING

IN SOUND PSYCHOLOGY, SOUND MEDICINE
AND SOUND RELIGION

Edited by W.B. Parker



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What the Emmanuel Movement Stands For

We quote Dr. J. D. Buck, in the *Cincinnati Commercial Tribune* of Feb. 14th, 1909.

"The social movements of modern times must seem to the casual observer diverse and often fantastic. In most cases they represent largely an emotional impulse, a reaction from oppression, a protest against favoritism or abuses, and so lead to extremes and fanaticism.

"But the careful student of human evolution and of social upheavals in the past, and particularly if he is familiar with the psychical epidemics of the middle ages, will find no difficulty in assigning to each and all of these social upheavals its place and value in the onward march of man.

"Beneath and running through them all like a golden thread, he will discern the humane instinct and the divine uplift that brings men closer together and constantly nearer to God.

"Many of these movements seem to have failed or ended in disaster. This is because we have failed to realize and appreciate the value of that combined experience designed for and capable of resulting in the knowledge of what to avoid, how a given thing is not to be accomplished.

"This combined experience is accumulative, and though few individuals discern the golden thread or appropriate the lesson taught, none of these lessons are really in vain. If they were, man would be hopelessly involved with no clew to the complicated labyrinth of life.

"The Emmanuel Movement just now coming into prominent notice has a deeper meaning and a more vital trend than most of its enthusiastic workers yet apprehend.

"Nothing in the past eighteen hundred years has gone to the heart of the mission of the Man of Sorrows and the genius of the Christ, so untrammelled by self, so uninterrupted by creed, so freed from stipulations and conditions, so wholehearted and sincere as this movement now taking form.

"It represents unqualifiedly the ministry of man to man."



HERMAN OPPENHEIM, M.D.

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PSYCHOTHERAPY

emotions cause motion. These movements are most quickly expressed in the small muscles, but the irradiation of energy is quite in proportion to the amount of emotion, so that, with some allowance for the self-control that is possible in human beings, we may smile or we may laugh aloud or we may dance and shout with joy. We may wince or stand at bay and fight or run away. These are all marked and visible and tangible effects.

When we examine a little more closely into the matter we see that the emotions do more than innervate the musculature of the body. Indeed, some of the finer motions themselves might escape us unless we gave heed to them, such as a light sigh, the dilatation of the pupils under stress or fear, and the horripilation of the minute skin muscles that causes the flesh "to creep" the hair "to stand on end."

When we come to consider the flow of tears, which distinguishes us so markedly from the lower animals, we strike upon another bodily system which is subject to emotional influence, viz., the secretory system. While tears are pre-eminently the expression of an emotion, other secretions are likewise frequently affected.* Emotions affect strongly the sweat-secretory system, as when the hands become moist or sweat breaks out upon the forehead under various mental stresses. These effects, too, though perhaps seldom thought of as physical concomitants of emotions, are sufficiently common to be well-known when brought to the attention. But what is more important for us in this study, is a recognition of some far profounder influences on such secretions, for instance, as the digestive juices, for interference here is prone to have far-reaching consequences to the whole organism.*

Pleasurable Emotions Health Giving

LAUGH and grow fat" is a truth founded on general observation, and has as a basis the genuine physiological fact that pleasant emotions favor the flow of secretions necessary to good digestion and assimilation. "Care killed the cat," intimating that worry wore out its nine lives, is the physiological antithesis. We grow thin

*See note at end of article.

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with other mental faculties, in the matter of their profound influence upon the physical tissues. We are in the habit of classifying the mental faculties as will, memory, instinct, intellect, consciousness and emotion. Among these faculties consciousness apparently might be dispensed with, without actually abrogating the existence of the other faculties. These others are indispensable to mind. We might in two senses call consciousness a higher imposition. The remaining faculties may be looked upon as so many sides of mind, and in the last analysis might all be resolvable into manifestations of feeling alone. "Mind is composed of feelings and the relations between feelings." The will itself is emotional impulse. We are constrained to look upon body and mind as inseparable, as a psycho-physical parallel. Perhaps for our purposes then we might better describe this psycho-physical parallelism as body and "affectivity."¹ This affectivity is the determining force in all our acts or omissions, and it is, to a certain extent, independent of intellectual processes, which may or may not be colored by it according to varying circumstances and conditions. Thus a piece of music, or a poem or a picture, may arouse a strong emotion in us at one time and not at another. Another evidence of this independence is the full development of affectivity in children, while the intellectual development is very slight. Still another example is the coloring of our whole day's work with some depressing emotion due to internal physical disorder or pain.

Now, since we are studying these points for the purpose of understanding their bearing upon disease, it is essential that we fix firmly in our minds the unity of the body and mind and their reaction upon each other. Body and affectivity are as inseparable as the machinery and the electric current that distribute heat, light and power. While the comparison is a crude one, when one thinks of the infinite complexity of the human mechanism, yet it will be helpful in clarifying our understanding of the subject. As in the machine some disharmony of mechanism disturbs the function and force of the whole apparatus, so in the human body some defect or disorder

¹Affectivity is a term which has been suggested to include many intracentral perceptive processes concerned with external or internal conditions together with the wide range of feelings of pleasure and pain.

EFFECTS OF EMOTIONS ON BODY

may affect both body and mind. As in an electric system some surcharge of current may burn out a fuse, or otherwise modify its actual mechanical organism, so in the body may some excess or perversion of emotion bring about actual physical alterations of a more or less permanent character. Thus an emotional "shock," a fright or surprise, which causes pathological changes in the tissues of the human body may be compared to a stroke of lightning or a crossed wire super-charging and destroying the parts in electrical machinery.

Acting through the Mind on the Body

THROUGH acting upon the mind, upon the emotions, we may not only influence the mind but also the body. To physicians this has been an accepted tenet or an unconscious practice in all ages. A great part of their therapy has been founded upon it. This has been the basis of all miracle cures, faith cures, exorcisms, Christian Science cures, and the like. Not only is disease frequently thus cured, but it may be thus produced. Everyone is familiar with the practical joke which some friends saw fit to play upon an associate. Each was separately to ask him, when they should meet him one morning, what ailed him, suggesting that he looked badly. The result was that the victim who was in good health at the time, was so possessed with the depressing idea of illness that he went home and to bed, and sent for his family physician. He recovered quickly when his alarmed companions confessed their wrong doing. The cheerful family doctor who makes light of an illness, which he knows to be temporary and not serious, inspires hope and courage, fortifies the patient, and hastens the cure. Even when a disorder is serious, he is helpful in overcoming it if he is able to infuse some beneficial emotion into his patient. His faith-healing is more powerful than his pills.

Suggestion which owes its efficacy to affectivity, may not only cure a disorder, but also cause one, as has already been intimated. There is, for instance, the experiment of Prof. Krafft-Ebing, who, placing a postage stamp on the skin of a young woman, told her it

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was a fly-blister and would produce a blister in a few hours. He carefully bandaged the spot, and sealed it so it could not be tampered with. In a few hours the blister actually appeared. Prof. Janet had a patient with religious ecstasy who believed she was to receive the stigmata of Christ. A blebs began to appear on each foot. He covered one foot with a bandage, a piece of mica, and a seal, and watched the actual development of an ulcer on each foot, under the influence of expectant emotion, the ulcers being precisely like those seen in the paintings and statues of the body of Christ.

The gross effects of the emotion on the various parts of the body are visible to the naked eye, but psychologists have been able to discover innumerable other effects that are more or less intangible, and would escape ordinary notice, by employing suitable apparatus, or by making certain scientific tests. For instance with a fluoroscope an increase in the vermicular movements of the intestines under emotional stresses may be observed. The deep reflexes, reflexes which are elicited by striking the tendons of certain muscles with a small hammer, are made more active by any emotional stress. This may be easily tried by anyone with the knee-jerk, which responds well to this test.

The pneumograph is an instrument which is adapted to the chest, and registers the minutest variation in breathing which may take place under emotional stimulation of different kinds.

The ergograph is a similar instrument but used for determining delicate changes of contractile strength, and small movements of muscles in like experiments.

The plethysmograph is an apparatus into which the whole of a forearm may be introduced for instance, immersed in water, so that the slightest possible movement or change in volume of the hand and arm may be registered.

The sphygmograph is an instrument applied to an artery, at the wrist usually, and records the pulse waves, giving their variations in frequency and impulse character.

All these devices are connected by some mechanism with a needle that records the different movements in the form of a wave upon moving strips of paper.

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The four associations, printed in italics, had abnormally long reaction times. All of the words are ordinary and insignificant to the cursory view. But the long reaction times showed us that these particular words were clues to some emotional complex, and on psychic analysis we found through the clues afforded by *water, lake, ship, swim*, that the patient had recently been depressed and had determined to commit suicide by drowning.

Revealing the Hidden Objects

ANOTHER and different kind of experiment was one carried out by me recently in the following manner. The object of the experiment was to discover which one of several men knew the contents of a box shown to him the day before the test was made. A cigar box containing a tiny flask of whiskey, a hypodermic syringe, some strychnine tablets, a pair of dice, a toy pistol and the photograph of Mlle. Dazie (a danseuse) was shown to one of three young men, B, and H, and R, students in the psychological department of Columbia University. The contents of the box were known to me and to one of the young men to whom the box had been shown by another person. I had never seen and did not know any one of the young men. They came to my house one evening and each was taken into my office and given the following series of fifty words, for the association experiment, the galvanometer being used at the same time. The significant words relating to the contents of the box are italicized in this list.

- | | | | | |
|---------------------|--------------------|-------------------|-----------------------|-----------------------|
| 1. Book | 11. To Travel | 21. Kind | 31. House | 41. Green |
| 2. Glad | 12. Pretty | 22. <i>Dice</i> | 32. Square | 42. Snow |
| 3. To Read | 13. <i>Whiskey</i> | 23. Coat | 33. <i>Photograph</i> | 43. Fresh |
| 4. Hard | 14. Soft | 24. Quickly | 34. Bright | 44. <i>Strychnine</i> |
| 5. Chair | 15. To Hurry | 25. To Sweep | 35. To Dig | 45. To Laugh |
| 6. Good | 16. Carpet | 26. Dusty | 36. Grand | 46. Cloudy |
| 7. To run | 17. Dark | 27. <i>Dancer</i> | 37. <i>Bottle</i> | 47. Curtain |
| 8. <i>Cigar box</i> | 18. <i>Syringe</i> | 28. Flat | 38. Flexible | 48. Gusty |
| 9. Hat | 19. Rough | 29. To Swim | 39. To Whisper | 49. <i>Pistol</i> |
| 10. Yellow | 20. To Flatter | 30. Short | 40. <i>Daisy</i> | 50. Cat |

EFFECTS OF EMOTIONS ON BODY

While the reaction time showed only moderate retardations, the false reproductions and galvanometer phenomena were so striking that the person (B) who had the guilty knowledge of the box and its contents was quickly discovered.

Here are ten significant words relating to the contents of the box, with the correct reproductions marked plus and the failures marked minus. B had the only minus signs, and these were with three of the most important words.

	H	B	R
Cigar box	+	+	+
Whiskey	+	—	+
Syringe	+	—	+
Dice	+	+	+
Dancer	+	+	+
Photograph . . .	+	+	+
Bottle	+	+	+
Daisy	+	+	+
Strychnine . . .	+	—	+
Pistol	+	+	+

The galvanometer fluctuations with the significant words recorded in inches were as follows:

	H	B	R
Cigar box	1	2	1
Whiskey	2	3	1
Syringe	2	4	0
Dice	2	3	1
Dancer	1	6	1
Photograph . . .	2	4	1
Bottle	1	3	0
Daisy	1	2	1
Strychnine . . .	2	4	1
Pistol	1	6	1

B's average excursion for the ten significant words was 3.7 inches. H's average for these words was 1.5 inches, and R's average for the same, $\frac{4}{5}$ of an inch.



... ..
... .. size was —

... .. noteworthy
... .. not noted.
... .. interested deeply
... .. occasional words
... .. would have
... .. real life.
... .. terminal in

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Notes and Collateral Reading

[Numbers refer to pages in the text]

(6) *Physiological Reaction Induced by Emotional Mental States.*—A consideration of the physiological reactions which may be induced by emotional mental states, as determined experimentally, allows us to see the range of disturbances which, as perversions, must occur and express themselves as pathological conditions. These have been extensively described by Féré, in "La Pathologie des Émotions," 1892, who noted an increase of about one quarter of arterial tension during fits of anger in an imbecile. Another well known work on this subject is Mosso's.

The volume of the heart may be affected by emotion. The tension of a civil service examination caused, not only alterations in the rate, rhythm and force of the heart beat, but also a temporary dilation of the heart that afterwards subsided. The examination was conducted so as to induce a high degree of excitement.

Modification of the functioning of the whole respiratory apparatus, including the nostrils and mouth, and perhaps increase of secretions, foaming at the mouth, are known to be brought about by emotions. For evidence of this effect of emotions on digestive glands see Pawlow's "The Work of the Digestive Glands," London, 1902; also see Cannon's article, "Recent Advances in the Physiology of the Digestive Organs, etc.," in the American Journal of Medical Science, 1906, New Series, Vol. XXXI, pp. 563-578.

Emotion strongly affects the gastro-intestinal functions, increasing or diminishing the secretions of saliva and gastric juice and even producing dyspeptic disturbances and diarrhœa. Pawlow showed what effect appetite, as a physical state, plays in the process of digestion. "The appetite is the first and mightiest exciter of the secretory nerves of the stomach," Pawlow, p. 75. Cannon showed, (Am. J. Med. Sc. 1906, p. 566) that in animals gastric peristalsis is stopped whenever the animal manifests signs of rage, distress or even anxiety.

Many other physiological modifications may be produced by mental complexes accompanied by strong emotions, and it may be expected that in extreme cases these would be so exaggerated and perverted as to result in pathological disturbances. Clinical observations seem to bear this out and many a psychosis, and persistent tremor, œdema, cyanosis, nutritive disturbances, etc., may be logically considered perversions and exaggerations of the normal changes due to emotion.

Paraphrased from Chap. IV of "The Unconscious" by Morton Prince, M. D., in Jl. of Abnorm. Psycho., Feb.-March, 1909, pp. 399-402.

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team to bring back into unison, and should not stand outside, once he has diagnosed the trouble, but should consider himself as part of the team to encourage it. It is evident from this that any one in charge of a sick person can be of great assistance to the doctor in his efforts, by taking the attitude of one not helplessly watching the fight with the disease, but interested and hopeful, like those who cheer their party in a game of skill and endurance. In a sick room, healthy minds, and sympathy, and courage may, he intimates, do much.

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moistening of the skin, even while it is so little that nothing but this delicate instrument appreciates it. The reason for the deflection of the mirror is that this moisture diminishes the natural resistance of the skin to the current of electricity passing through the body. The light deviates therefore, in proportion to the intensity of the emotion aroused. These emotions are stimulated by questions, stories, statements, music or by word associations.

One is overwhelmed with astonishment at its manifestations, as this ray of light glides to and fro in response to the emotional changes going on within an organism.

There are minor oscillations which practice and observation exclude, due to the usual familiar factors which modify resistance, such as hot and cold, and moist and dry skin, varying surface of contact, and varying pressure, but these are, as stated, minor movements, and do not interfere, when understood, with the extraordinary deflections in connection with the emotions. These emotions must be actual and real. The emotion of expectant attention or anticipation (as in the threat of a needle prick, or apprehension of a noise) has a noteworthy influence on the psychometer. There is usually a latent period of one or two seconds before the deviation begins, after the irritation has occurred, but the latent period is reduced by the intensity of the emotion aroused.

It is almost like sorcery to observe the behavior of the instrument with a series of words, some purposely chosen to be emotionally different and others to strike some emotional complex deep in the soul of the individual experimented upon. The patient is required to respond to any word with the first word that comes into his consciousness. Indifferent words produce no effect upon the finger of light in the psychometer, but words associated with an emotional complex send the light along the scale for a distance in proportion to the intensity and actuality of the emotion aroused.

Using these series of words is like fishing. Each word is bait on a hook thrown into the sea of the unconscious, and the species of fish that likes the bait is immediately caught and brought to the surface. The method of study of associations in the mind of man, so effectually carried out by Jung before the discovery of this new in-

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gentleman was not surprised when the post office officials forced him to give up the use of the mails.

But when we recognize, as we must, that these sharpers are simply trading on the credulity* of the public and have nothing but their capacity for ingenious lies to support their claims, we must not lose sight of the fact that these frauds do actually cure people, and even some people whom doctors have failed to cure. This is a fact which many of us find difficult to face—the fact that lies can do so much good in the world.* But there is certainly no use in blinking it, and furthermore, the fact that so much good does come of this evil has undoubtedly been one of the reasons why in more subtle form, presently to be mentioned, mendacity and psychotherapy have tended so strongly to join forces.

Placebos or "Bread Pills" as a form of Psychotherapeutic Deception

THE next, and slightly more refined stage of mendacious psychotherapy, is represented by what used to be called "bread pills," or what the physician now more decorously calls *placebos*.* The literal meaning of this last word is "I will appease," "I will set at rest." It indicates the nature of the argument by which physicians defend the use of this form of well meant and successful deception. Let me make it perfectly clear at the outset why I designate the very common practice of the use of placebos as only a rather subtle form of lying. Imagine a physician frankly confessing what it is that he does when he gives a "bread pill." Imagine him saying to his patient—"This box contains a dozen pills composed of sugar of milk. They have, of course, no action as drugs, no actual physiological effect upon your tissues, other than what may be produced by the very small quantity of sugar contained within them. But upon your mind they will have a very powerful and helpful effect; they will lead you to believe that I am doing something for you, when, in fact, there is nothing that I can do. They will take up your attention and enable you to explain to your neighbors the means by which your health is to be regained. In this way, having distracted

*See note at end of article.

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order to test the individual's power of reproduction. When words have struck an emotional complex, there is apt to be failure of reproduction or a false reproduction. Such failure or error is therefore also an indication of an emotional nidus. The reason for the mistake is the same as for the prolongation of reaction time; there are so many words associated with the complex that the test person either forgets the word given at first or substitutes another. The word-association test, therefore, supplies us with two clues to an emotional complex, the retarded action and the erroneous reproduction. But there is still another aid in the same test, viz; that often when a significant word strikes an emotional complex, the emotion aroused continues long enough to effect the next following association or associations, however insignificant these words may be. This is called perseveration. The reaction time in these succeeding word associations is also prolonged.

Hence by employing this word-association method in full as described, and at the same time using the galvanometer, we have a most excellent means for discovering clues to emotions in any person tested. Such emotions are further developed by a psychic analysis based upon the clues, and in this way we are enabled to learn the mental trend of normal individuals, to discover the nature of the emotional complexes that lie at the foundation of some mental and nervous disturbances among the sick, and even to pry into the secrets of the suspected criminal.

As an example of this new procedure I may cite the following:

A patient was given a series of unimportant words and the reaction time measured. These are the words:

Stimulus Word	Reaction Word	Reaction Time	Stimulus Word	Reaction Word	Reaction Time
Head	Hair	1.4 sec.	Wool	Knit	1.6 sec.
Green	Meadow	1.6 sec.	Spiteful	Friendly	1.4 sec.
<i>Water</i>	<i>Deep</i>	5. sec.	<i>Lake</i>	<i>Water</i>	4. sec.
Stick	Knife	1.6 sec.	Sick	Well	1.8 sec.
Long	Table	1.2 sec.	Ink	Black	1.2 sec.
<i>Ship</i>	<i>Sink</i>	3.4 sec.	<i>Swim</i>	<i>Can Swim</i>	3.8 sec.
Ask	Answer	1.6 sec.			

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Thus, if a patient comes to one of our great Boston hospitals with an hysterical loss of voice, he is generally treated by the form of electricity known as "static electricity sparks." From the point of an impressive brass instrument held in the physician's hand, brilliant jets of fire are made to dart with a sharp report against the patient's throat. No one believes that they have any effect upon the vocal cords or upon any part of the apparatus of speech, except through the deep impression which they make upon the patient's mind. He is startled into articulateness, shocked into speech, by a remedy which, like many others of this class, was formerly believed by physicians to have a definite physical effect upon the tissues, as was the case with the plasters and liniments of our grandfathers.

At another well known Boston hospital "suggestion is administered"—so the phrase runs—by means of a tuning-fork which is there called a magnet. This magic wand is held near or upon the part of the body from which it is wished to remove a pain, or an hysterical paralysis. I tried once to convince the eminent physician who had recently published an account of this "magnet" that there was no considerable difference between this method and the use of an "electric belt." He defended himself vigorously, first on the ground that he was making no money out of the quite harmless deception, and secondly that it was not a deception, because it cured the patient.

Throughout neurological literature we find one or another form of deception used in this way. Usually, like static electricity, or the tuning-fork, the fraud represents some method of treatment once used in good faith by men who believed in it, now surviving as the use of religious symbols does in the hands of some skeptics.

Deception in the Assertions of "Healers" and Neurologists

BY a further process of refinement we find the well-meant deception forming part of the "suggestions" given by many "healers" to their patients. Most of those who use hypnotism, and many of those who give suggestion, with the patient in a hypnotic or

truth and telling lies. There are three alternatives, not two. One can be a literalist, a creator, or a liar, and it is in our eagerness and determination not to be a literalist that we rush to the other extreme, skip clear over the happy mean and become a liar. I must now try to explain and illustrate the meaning of these terms.

Literal description of what we find before us is the chief business of all natural science and of the physician, so long as he deals with diagnosis. In this respect he merely shares in the activities of most scientific men whose business is to describe nature. In this field of effort his supreme desire is to avoid mixing himself up with the facts; he must never mix his own desires or prejudices with the actual state of the case. If he is watching the effects of alcohol upon a patient, he must do his best not to be misled by his prejudices about alcohol and his sense of its possible dangers to healthy human beings. He must try to see with an absolutely unbiased mind what the effect of this drug is here and now, in the case of pneumonia before him.

This is a difficult feat. Anyone who has ever attempted scientific work knows how difficult it is to make himself a passive and literal reporter of the facts, excluding altogether his own expectations, wishes and prejudices.

In Treatment, the Literal or Descriptive Yields to the Creative Attitude

THIS habit of mind is most difficult to acquire, but once acquired it tends to spread itself over our whole mental life. Now if one should listen to the words of many who speak in the name of science, one would suppose that nothing could be more desirable than this possession of the whole mind by the habit of passively reporting the facts. Yet it takes very little common sense to show us that the attitude of mind essential for diagnosis is ruinous in treatment, because in treatment it is essential that we *should mix ourselves up with the facts* and not stand aloof from them. Suppose we see a man drowning and proceed to describe accurately the contortions and sounds issuing from his neighborhood. We are then taking a strictly literal or scientific point of view and not interfering in any way with the course of nature. This preposterous behavior would

would be like trying to say how far a wagon will go with no horses attached, or a steam engine with no steam. The prognosis of appendicitis, for example, depends very largely upon who operates, and how tired he is when he does the operation, who his assistants are, and how harmonious the team is this morning. But obviously in cases like this our desires, our skill, our earnestness, modify the state of the facts. It is but a short step from the recognition of this to the habit of allowing "our wish to be father to our thought," so that we state as true, what we wish were true, which is the essence of many a lie.

Some Reasons for the Future Linkage of Psychotherapy and Truth

THIS brings me to the final topic of my paper, the attempt to state a golden mean between a timorous literalism, which looks on and reports, and an ungoverned tendency to fiction. The way out, as it seems to me, consists of a judicious combination of agnosticism and command. We do not know what is to be the outcome of a given disease, but let us pitch into it! We cannot tell how much is to be accomplished by our best effort, we cannot actually foretell the future; but there is no necessity that we should do either of these things. What is wanted is simply that best effort, that proper team-work of doctor and patient against their common enemy, disease. "Are you sure that I am going to get well?"—many a patient asks us; and we are often tempted to say, "Certainly, I am entirely sure of it; there is no possible doubt of it!" It seems as though such assurances must be what the patient needs, and yet I am very strongly of the opinion that usually the patient sees through our attempt to better the situation, detects the effort of pumping up a certainty which we do not feel, and so fails to receive the reassurance we are trying to send.

It seems to me not only truer, but more effective to answer, in such cases: "I cannot say whether you can get entirely well or not. I have every reason to think that you can be better. All experience of cases similar to yours, tends to show that under a régime such as you are now pursuing you will be better, and I cannot set a limit beyond

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cessfully deceiving a patient, for the latter's good, a disinterested third party looking on, observes that the boot is really on the other foot. The patient knows perfectly well what is going on, and in order to secure the peace of mind of his physician, pretends that he believes all that is told him, takes the placebo humbly and pours it down the sink.

Taking the Public into the Physician's Confidence

IN the last few years, however, it seems to me that a better ideal is coming to rule in this matter. Physicians, business men, clergymen and others are trusting more to the power of truth and less to the power of fiction. We have begun to see that in psychotherapy, as in the treatment of tuberculosis, we need the full co-operation of the patient, and that we cannot achieve this unless we tell him the truth, and the whole truth, about his trouble so far as we know it. We are getting over the ultra-paternalistic attitude, which we used to take towards patients. We are beginning to have more confidence in their power to understand. This change is part, I think, of that process of evolution, so well described by Mr. Joseph Lee in his article on "The Expert and the Public." The physician, as expert, has had, in the past, the profoundest distrust of the public; he has preached, in season and out of season, the doctrine that "a little learning is a dangerous thing," forgetting that the danger in question is one that cannot possibly be avoided, since every member of the human race without exception is exposed to it.

Along with the establishment of public medical lectures at the Harvard Medical School, the extended teaching of hygiene in the public schools, the traveling exhibits for the demonstration of the curability of consumption, comes a greater readiness on the part of physicians to talk to patients about nervous diseases as formerly they talked only to other physicians, and to try to make the patient manage himself, instead of managing him at arm's length, and by those occasional interventions which the doctor's visit makes possible.

This frankness lays a basis for a deeper confidence on the part of

¹Atlantic Monthly, November, 1908

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(a) the mere rags or toys, such as electric belts, that have often been effective instruments to that end; (b) the bread pills and porous plasters, and also the kindly fibs told to the patient; and (c) the hardly warranted suggestions given to the patient under hypnosis, and also the hardly warranted promises physicians sometimes make, regarding cures.

2nd. Dr. Cabot realizes the good side of this, but says that there are not only the two alternatives, bald, harmful truth and falsehood, but that creative assertion may be used. The doctor should, in treatment, mix himself with the facts of the patient's condition, and interfere with them.

In his article, "Creative Assertion," in Issue 2, Dr. Cabot pointed out that the doctor's means of interfering with the facts depend on his sympathetic understanding. In his article on the team work of body and soul, in Issue 3, he describes the vicious cycles that disease sets up in the human commonwealth, and suggests ways of breaking them up. He now develops this idea of team work one step further, making the doctor a part of the system.

3rd. Dr. Cabot then brings out the fact that anything said to a patient apart from the truth is dangerous, because the patient is too likely to see through it and fail to get any reassurance whatever. He advises the doctor to take the patient into his confidence. Frankness given with encouragement, lays the basis for a still deeper confidence on the part of the patient.

Notes and Collateral Reading

[Numbers refer to page in text]

24. *Natural Credulity*.—When an assertion is made, our first impression is to believe it. The child believes what he is told. Daily experiences, the habit of correcting errors which are imposed upon us, the second nature with which social education furnishes us, gradually weakens this inborn credulity, this naiveté of youth. Like all the innate feelings of the human soul, this credulity always survives to a certain extent. Say to some one, "There is a wasp on your forehead," and mechanically he puts his hand on the spot. Indeed, there are persons who even believe they feel the sting.

—Bernheim, "*Suggestive Therapeutics*." p. 132.

24. *The Faith Cure*.—Dr. Carpenter says: "That the confident expectation of a cure is the most potent means of bringing it about, doing that which no medical treatment can accomplish, may be affirmed as the generalized result of experiences extending through a long series of years."

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dreams. It is a psychological law that sleep puts the brain into such a psychical condition that the imagination accepts and recognizes as real the impressions transmitted to it.

—Bernheim, "*Suggestive Therapeutics*," 1906, pp. 202-203.

The Next Article

EDITOR'S NOTE.—Dr. Putnam in his preceding articles in this course has been leading up to a conception of what a healthy human being is. In his first, he pointed out that the philosophy in a man's mind, idealistic or materialistic, counts for a good deal in the way a man encounters his troubles. He lays it down as a principle that idealism is little more than a statement of the facts of life and that it conforms to common sense. Further, that it also gives value to the elements of rationality and order found in man. Yet this hopeful philosophy is not alone sufficient, for man is driven to live also in a world of faith and in the world of science. Following this, Dr. Putnam, in his second article, gives a general picture of health, but concludes that the distinction between health and disease can not be definitely marked. Health, he shows, is more truly adjustment of the person to his particular surroundings, and must be thought of as representing an equilibrium. In his third article, Dr. Putnam speaks of the great value to the world, of persons who have won through trials and sickness, and gained from the struggle something more than resignation. He finds that such have capacity for recognizing the beauty of the common things of ordinary life, for loyalty, for taking pleasure in the good of others, for faith and other truly human virtues. Then, in drawing attention to the fact that even the best of health is a process of becoming, of progress towards something better, and that, in this, it parallels the recovering from sickness, he suggests to us the value that sickness may be for the invalid in a training that may bring him further on his way than he could have gone without it.

In the present article Dr. Putnam leads us to consider the best type of human beings. He presents the healthy mind and body in its environment, as organized for pushing on to some higher goal, where it will find a fuller use for its powers. He shows the importance of this activity which is self expression, in the maintenance of health. In conclusion he develops the idealistic doctrine that personal effort counts much in our lives.

Importance of the Instinct of Self-Expression

SOMETIMES these impulses represent only the unquenchable necessity for self-expression, overriding pleasure and prudence and the desire for "satisfaction;" and not necessarily taking the form of definite purpose, though in the end purpose may be added.

He rose at dawn and, fired with hope,
Shot o'er the seething harbour-bar,
And reached the ship and caught the rope,
And whistled to the morning star.

And while he whistled long and loud
He heard the fierce mermaiden cry,
"O boy, tho' thou art young and proud,
I see the place where thou wilt lie.

"The sands and yeasty surges mix
In caves about the dreary bay,
And on thy ribs the limpet sticks,
And in thy heart the scrawl shall play."

"Fool," he answer'd, "death is sure
To those that stay and those that roam,
But I will nevermore endure
To sit with empty hands at home.

"My mother clings about my neck,
My sisters crying, 'Stay for shame;'
My father raves of death and wreck,
They are all to blame, they are all to blame.

"God help me, save I take my part
Of danger on the roaring sea,
A devil rises in my heart,
Far worse than any death to me."
—Tennyson "The Sailor Boy."

This spontaneously-acting force is not identical with "adaptation," taken in the usual sense, that is, adaptation to a given environment. Every sort of progress might perhaps be said to effect an adaptation to an *ideal* environment; but even this conception would

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be incomplete for the self-active principle of life does not lead to progress solely through holding up definite goals and then impelling us to reach them. It may be guided by intelligence, but does not exert itself simply in the interest of aims intelligently conceived. Adaptation makes for safety through conformity—spontaneity often sets conformity at defiance. But it should not be forgotten that spontaneity to be useful needs guidance and that liberty is best shown in obedience to law.*

This is a point to which Emerson used frequently to call attention. It is an excellent thing to form purposes and to carry them into execution and the ability to do this in a rational way is one mark of a good and a healthy mind. But back of this lies the fact that, as "beauty is its own excuse for being" so it is a good and healthy thing to live out one's native instincts, provided only that the courses to which they lead us do not run distinctly counter to the dictates of intelligence. It is to the study of this important instinct of self-expression, as seen when guided by intelligence and purpose, that the present article is devoted. It may be considered: (a) as competing with *adaptation* for the first place among the agencies that control our destinies; (b) as helping to organize our memories, our habits and tendencies and our personalities, in the interests of unity and effectiveness. Finally, I shall consider certain mental conditions that immediately result from spontaneous self-expression or that favor its development.

As in the last article, the leading motive of the inquiry will be an attempt to emphasize the best types of conscious human beings, and it will be pointed out that there are distinct advantages in taking such types as points of departure for the study of less perfect and distinctly imperfect forms.

The Vital Principle as a Creator of Structure

IT has been my purpose to present a scheme which should be, on the whole, in harmony with that so well developed by Bergson, in his two remarkable books, *Matière et Mémoire*, and *L'Evolution*

*See note at end of article.

Créatrice, supplemented at certain points by the idealistic doctrine of "personalism," as presented by Bowne.¹ It would be impossible to give here anything like an adequate description of Bergson's views. Let it suffice to say, a living being at its best, is to be thought of as organized for action, and as the ever unfolding expression of a vital principle which is constantly pushing towards a better outlet for its powers. This vital principle is not teleological, in the sense of distinctly positing the goal towards which it strives. But neither is it compelled to wait forever until the organism has gained, through the concurrence of a long series of happy accidents, an anatomical structure fitting it to serve as the tool of a fuller life. Instead of this the vital principle is to be viewed as the modifier and creator of structure, in the sense that the function of a living and progressing organism, possessed of mind and body, has always a little more capacity, a little more significance than its anatomy would warrant us in believing.

The living organism is only to be adequately studied by placing oneself in its point of view, *i.e.* by living its life in imagination. The conduct of such an organism can never be absolutely predicted, no matter how rich a collection we assume ourselves to have gathered of the influences by which its action is supposed to be determined. Each new act that marks its progress is the unique outcome of its whole past, which unifies itself afresh at each moment, under the guidance of our memories, to meet the needs of the present. Our bodies are relatively stable collections of motor mechanisms in which our habitual reactions are established.

The "laws of association," which deal with our thoughts as if with a set of bricks set up on end, the fall of one of which entails the fall of a series of the others, are thus supplemented by the conception of a series of interlocking, vitalized forces, won through living experiences and working themselves out again in new living experiences that express the relatively free acts of a creative being. "Spontaneous initiative" and "self-expression" are terms for the vital impulse which underlies the expansive activity of the organism, as it is seen in the consciousness of man.

¹ *Personalism*, Boston, 1907.

biologists would reply: "The mind carries some steps further the bodily adjustments which have proved useful in adapting the organism to its environment; this task is all that can be required of it, for in perfecting this 'adaptation' lies the work of life. Nature," they would say, "is 'given;' it existed before organic life began; it has no dependence upon 'mind,' and in its forces the secrets of the origin of organic life lie locked." Next to nature, according to this conception, come the simpler forms of life, and it is with them and their reflexes, their apparently adaptive existence, marked by no higher strivings, it is thought, that the study of psychology should begin; or, if not with them, with the relatively humble mental manifestations of the young child, analogous to reflexes but carrying their work a good deal further.

It is true that considerable portions of our lives are spent in obedience to this law of adaptation, and Angell¹ is right in pointing out that the period when the infant first manifests, in definite form, the signs of "mind," is when vision first introduces it to a new world of manifold possibilities and forces it to make choices between paths that had had no place in its previous world of reflex life. It is also true that, throughout our lives, we employ a great deal of our time and effort in planning how to live without incurring too severely the hostility of nature, in learning to note the movements of her warning finger, in adapting ourselves to her demands and seeking to win advantage for ourselves through a better knowledge of her laws.

Adaptation does not Account for the Higher Mental Life

AND yet, although sound and important, the principle of adaptation is not as thorough going as is commonly believed. Even as a means of explaining biological phenomena it is inadequate, and it fails utterly to account for the higher mental life. To use a simile of Bergson's, a road adapts itself to the surface of the country over which it passes, but this does not explain why the road was laid out between the towns which it connects. We can look backward

¹ James R. Angell, *Psychology*, 4th edition.

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Three years she grew in sun and shower,
Then Nature said, "A lovelier flower
On earth was never sown;
This child I to myself will take:
She shall be mine, and I will make
A Lady of my own.

"Myself will to my darling be
Both law and impulse: and with me
The Girl, in rock and plain,
In earth and heaven, in glade and bower,
Shall feel an overseeing power
To kindle or restrain.

"She shall be sportive as the fawn
That wild with glee across the lawn
Or up the mountain springs;
And hers shall be the breathing balm,
And hers the silence and the calm
Of mute insensate things.

"The floating clouds their state shall lend
To her; for her the willow bend;
Nor shall she fail to see
Even in the motions of the Storm,
Grace that shall mould the Maiden's form
By silent sympathy.

"The stars of midnight shall be dear
To her; and she shall lean her ear
In many a secret place
Where rivulets dance their wayward round,
And beauty born of murmuring sound
Shall pass into her face.

"And vital feelings of delight
Shall rear her form to stately height,
Her virgin bosom swell;
Such thoughts to Lucy I will give
While she and I together live
Here in this happy dell."

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The development which this description suggests might be interpreted in either of two ways. On the one hand, the idealized picture of nature could be taken as veridical. The story would then stand as a poetical rendering of adaptation, taken at its best. Nature here appears as the type-giver and the teacher. Her murmuring brooks, her storms, her bending willows are assumed to possess,—of themselves and in their own right—beauty, strength, repose, and to pass the secret of their acquirement on to the child whom she consents to take as pupil. Nature is 'given' and the living being, with its infinite plasticity is expected to adapt itself to her. This is the account which Wordsworth himself would perhaps have favored and it is certainly that which a biologist of the materialistic type should accept as logical.

There is indeed one point of view from which the conception of Nature as a teacher could be justified, that namely in accordance with which Nature is regarded as the material expression of a higher consciousness, the intermediary between such a consciousness and ours. But this mode of regarding the matter does not represent the attitude of the materialist and is not that for which the biological conception of "adaptation" stands. It is, on the other hand, entirely in accord with the other possible interpretation of the harmonious development of which the poem tells. In accordance with this latter view it is the child, not Nature, that was supreme and, Nature only furnished the means through which "Lucy" was to be given the chance to win her way, by the working out of her own initiative, controlled by the necessities of achievement, into the conscious possession of the qualities that were by birthright hers. It was her power to entertain visions, to clothe her sounds and sights with an ideal meaning, as every healthy child delights to do, her power to live a fuller life, that played the part of the real architects of the structure that we are expected to admire. The stream can not rise higher than its source and Nature, taken in the physicist's sense, cannot be expected to give birth to conscious life. The real source of the spring that wells up from level ground often has to be sought in a far distant mountain range.

If adaptation was a principle of so wide an application as is often

thought, then anatomy and physiology should not only afford our best approach to psychology but should be our best guides even to the end. If the life of organized beings consisted solely in "adaptation," in a process of moulding that seeks out all the paths of least resistance and follows them, as a cup of water poured upon the ground turns here and there and picks out all the slight irregularities of the surface, then indeed there should, theoretically, be no mental act that did not have an *adequate* bodily equivalent and might not, if we knew enough, be adequately studied through observation of the body and the brain. Yet this is not the case. Mental acts can be studied advantageously but not adequately in this way.

There is a point of difference here that should be clearly understood, for it is of great significance. It is said that it is impossible to conceive of a mental process unaccompanied by a physical process and that if this be so then these two processes must be equivalent. But the facts can and should be read quite differently. It is true that each mental act must express itself in a physical act or rather in a congeries of physical acts, but equally true that it can not fully¹ express itself in that fashion. It is the chief characteristic of a vital process that it constantly impels the physical mechanism to which it corresponds towards an act which is in some measure new, thus making this new act the outcome of a unique history. But the outcome cannot be considered as, in any proper sense, the complete embodiment of the attempt, any more than an institution can be considered as the complete embodiment of the organizing conception that gave rise to it. A man can not fully express his thought in words or signs. A collection of muscular acts are not complete expressions, even of the brain-processes from which they spring, and the inadequacy of this relationship typifies the inadequacy of the attempt on the part of the thought to get itself fully rendered in the movements of the brain. Something is lost in the very organizing of the expression, just as some of the heat generated

¹The shadow of a flying bird changes with every movement of the wings; but it does not adequately express the bird's flight. With regard to the general question of the relation of mental processes to physical processes, serious students are referred to Bergson's *Matière et Mémoire*.

Evidence for Spontaneous Initiative in all forms of Life

IN seeking evidence, through observation, for the presence of this spontaneity and freedom, it would be unjust to look first and mainly at the simpler forms of animal life. The student who wishes to learn the possibilities of architecture does not hunt for them among the mud huts and straw shacks of the savage when the Gothic cathedrals and the temples of Egypt are within his reach, although he might affirm that the same great principles underlay them both. It is easy to find evidence for the determinateness of the reactions of an amœba or a worm, but it would take a worm—or an amœba—philosopher to estimate their freedom.

The evidence for spontaneous initiative is not wholly of the introspective sort. There are observers of nature and conservative psychologists who think its presence to be demonstrable and its significance very great. James¹ asserts as at least possible for instance that in "attention" we possess a real selective power which raises this faculty above the mechanisms of adaptation, making it the handmaid of purpose, of will, of the choice and the pursuance of ideals.

(1) "I have spoken as if our attention were wholly determined by neural conditions. I believe that the array of *things* we can attend to is so determined. No object can *catch* our attention except by the neural machinery. But the *amount* of the attention which an object receives after it has caught our mental eye is another question. It often takes effort to keep the mind upon it. We feel that we can make more or less of the effort as we choose. If this feeling be not deceptive, if our effort be a spiritual force and an indeterminate one, then of course it contributes coëqually with the cerebral conditions to the result. Though it *introduce* no new idea, it will deepen and prolong the stay in consciousness of innumerable ideas which else would fade more quickly away. The delays thus gained might not be more than a second in duration, but that second may be *critical*; for in the constant rising and falling of considerations in the mind, where two associated systems of them are nearly in equilibrium, it is often a matter of but a second more or less of attention at the outset, whether one

¹*Briefer Psychology*. See also *Talks to Teachers*, William James.

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Royce,¹ in discussing essentially the same problem, goes even further than James and finds it possible to discover from the observation of the simpler animals, evidence for the existence of spontaneity.

It has long been claimed that the products of certain natural springs have properties which are not possessed by artificial waters made in exact chemical imitation of them. Since the discovery of radium, so indestructible yet so powerful even in minute amounts, it has been suggested that the properties of these springs are due to the remarkable qualities of this substance, present in infinitesimal quantities. Such is the significance of personal initiative in mental acts. This, too, seems of trivial amount when contrasted with the massiveness of habits, inherited and acquired, the momentum of imitation and the working out of influences akin to adaptation. But in fact it is to be ranked among the ultimate realities of the universe.

system shall gain force to occupy the field and develop itself and exclude the other, or be excluded itself by the other. When developed it may make us act; and that act may seal our doom. When we come to the chapter on the Will we shall see that the whole drama of the voluntary life hinges on the amount of attention, slightly more or slightly less, which rival motor ideas may receive. But the whole feeling of reality, the whole sting and excitement of our voluntary life, depends on our sense that in it things are *really being decided* from one moment to another, and that it is not the dull rattling off of a chain that was forged innumerable ages ago. This appearance which makes life and history tingle with such tragic zest *may* not be an illusion. Effort may be an original force and not a mere effect, and it may be indeterminate in amount. The last word of sober insight here is ignorance, for the forces engaged are too delicate ever to be measured in detail. Psychology, however, as a would-be 'Science' must like every other Science *postulate* complete determinism in its facts, and abstract consequently from the effects of free will, even if such a force exist. I shall do so in this book, like other psychologists; well knowing, however, that such a procedure, although a methodical device justified by the subjective need of arranging the facts in a simple and 'scientific' form, does not settle the ultimate truth of the free-will question one way or the other."

¹*Outlines of Psychology.*

Editor's Summary

(1) In this article, Dr. Putnam points out the qualities which characterize healthy-minded persons. He shows (a) that their freedom, tranquility and readiness of action arise from the fact that their lives are unified, and that there is no disharmony among their mental forces, and (b) that this unity depends on a certain spontaneous activity in them, a vital impulse that expresses their need of self-development or of self-expression.

(2) He shows that this spontaneity is not merely the adapting of oneself to his environment, even to an ideal environment. Adaptation makes for the safety of the individual, while self-expression or spontaneity may, as is shown by Tennyson's, "The Sailor Boy," be an impulse that invites to danger. This shows that the vital impulse may set ordinary conformity at defiance. Yet, he explains that if it be healthful, the impulse must act always with intelligence and purpose.

(3) Dr. Putnam says that the instinct of self-expression may be considered as competing with adaptation to shape our destinies and, as helping to bring all our faculties into harmonious effectiveness. For a living being may be thought of as the expression of a vital principle that is ever pushing towards a better outlet for its powers. This vital principle is not compelled to wait on chance, to fit the being to act with increased efficiency. On the contrary, it modifies and creates structure, in this sense, that the being holds, at any moment, more capacity than its anatomy can account for.

(4) Dr. Putnam points out that our bodily mechanisms are not so unalterable or so powerful upon our destinies as they sometimes seem. The mind acting at its best may recuperate the body; man's visions, ideas, and the nature of his philosophy may create or destroy life in him. He shows that if bodily weaknesses compel the mind to develop a harmonious unity among its forces that those very weaknesses may, in themselves, be the causes that open to him a serene and full life, in which, when it is rounded out, the weaknesses are overcome and forgotten.

(5) To the claim of many biologists that the mind renders its best service to the organism by carrying one step further the bodily adjustments that have proved necessary to the well being of the organism in its environment, and that this is all it can do, Dr. Putnam answers that it is true that the mind does this work of adaptation but that this alone does not account for man's higher mental life. He pictures a road through a broken country as adapting itself to hill and valley, and says that the road builder did more than adapt it to the nature of the land, he gave it the right direction from city to city.

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pressing enough for us to lose ourselves in it. The action itself reaches its perfection only so, and that means that thought and purpose and feeling also, come to their perfection only so. Selfishness—even the most exalted type—and introspection, in their very nature spoil the mood of work and make impossible the best attainment in character and the highest happiness.

—King, "*Rational Living*." pp. 194-196.

43. "*Something Equivalent to Mind*."—In his first article Dr. Putnam, in setting forth the views of physical science upon the origin of life, referred to the great German chemist, Wilhelm Ostwald. Ostwald's conception of "organic memory" to which Professor Putnam there alluded may appropriately be given here as an illustration of recent scientific ideas concerning the continuity of mental qualities throughout the various forms of life. In his Ingersoll lecture, "Individuality and Immortality," (Houghton, Mifflin & Co., 1906) Professor Ostwald says:

"If we ask upon what property does the difference between man and even the highest of the lower animals depend, we get a most varied set of answers from different people. But when all considerations other than purely empirical ones are put aside, we find this difference dependent on the *different development of memory*. Memory is the indispensable prerequisite for learning, and man's culture rises so much higher than that of any animal simply because his memory is by far the best.

"Memory helps man in knowing how to act when dangers approach or wants are to be satisfied. By memory he learns to distinguish between good and evil. Memory helps him not only to look into the past, which can no longer be changed at will, but also to look into the future, which may be changed to his advantage. For if he knows how things happen he can foresee the later part of an event of which only an earlier part has been observed. The series of consecutive events which he can survey at any given time may be a short or a long one and his power of prediction will be small or great accordingly; but in every case he can act as a prophet, though perhaps not always a very powerful one.

"Memory in the broadest sense is found even in the lowest forms of animal life, and, in fact, in all organic life. As Hering pointed out a long time ago, memory is a universal function of all living matter, if the word be extended to its proper quantity. The possession of memory means, then, that all living matter is so changed, by any process which goes on in it, that a repetition of the same process becomes easier, or occurs sooner, or takes place more quickly, than any other process. What the cause of this property may be we do not know, and the construction of any example from a physical-chemical standpoint is not an easy thing to do. There is no reason why this should not be done, however, and it seems possible

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that we may some day find out the very means which Nature uses in the formation of memory.

"It is wonderful how the consideration of this property enables us to understand certain very general and important facts concerning living beings. That organisms form classes and species is a consequence of this property, for no animal or plant would keep a constant form of constant habits if the repetition of an act already performed were not easier than doing something new. The process resembles a path through the wilderness. The mere fact that the footprints of a previous wanderer can be recognized is sufficient to cause the later wanderer to keep in the same path, although he might possibly find another more convenient way if he made himself independent. The third man follows where his predecessors went, and the path becomes more and more distinct, and a deviation from it more and more unlikely to occur. We may imagine the processes which brought about the origin of species and the maintenance of their relatively constant properties to have been of this same type."

The Next Article

EDITOR'S NOTE:—The interest in the following translation by Dr. Frederick Peterson and Evelyn Garrigue of a chapter from "*Isolement et Psychotherapie*," by Drs. Jean Camus and Phillipe Pagniez lies not only in its scholarship and research, but also in its practical bearing upon the whole subject. It gives us a brief and lucid account of mental healing, as it was practiced by the priests and physicians of antiquity; by priests, sorcerers, mystics and astrologers of the middle ages, and by charlatans and others of more recent times.

The article surveys the cures wrought by the long succession of Kings—Solomon, Pyrrhus of Epirus, Vespasian, Edward the Confessor, and other Kings of England and of France. We know that, as the Spanish ambassador is said to have told King James II, of England, Kings are only a ceremony, though a grand ceremony in their way. "The King's touch" is a successful appeal to the imagination.

It has been said that it is easier to deny a miracle than to find some common law of nature that will explain it. We see from many incidents given in this account, that faith exerts its powers whether there is truth or falsehood behind it.

This translation from Camus and Pagniez, supplements naturally the historical presentation of healing in the Church, begun by the Rev. Loring W. Batten. It will be followed by a series of articles, including: "Healing in the New Testament," by Dr. W. L. Bevan; "Healing in the Middle Ages," by the Rev. Curtis Manning Geer, Ph. D., etc.

The History of Psychotherapy, II

Psychotherapy by means of the Miraculous¹

Trans. By FREDERICK PETERSON, M. D. and
EVELYN GARRIGUE, M. D.

From the French of Camus and Pagniez²



HE miraculous might be defined according to Littré as that which is produced by the intervention of supernatural beings.

In a broader sense this name of miraculous is also given to that which is produced, not by supernatural beings, but by concealed forces, imperfectly understood, and more frequently wholly imagined. During all ages men have believed in the possibility of cures due to occult intervention of these beings or forces, favored or induced by practices more or less mysterious. History is full of facts of real or pretended cure, and the nature of the ascribed cause leaves no doubt that they were effected solely by suggestion. But while psychotherapy by means of remedies has been principally medical, psychotherapy through the miraculous has only been occasionally medical and if physicians have not always disdained the use of mysterious practices in the treatment of patients, it has never been more than a temporary mistake.

Whatever the process employed the cure supposed the patient had either an affection which we would to-day classify as functional,

¹See note under "The Next Article," on preceding page

²Drs. Jean Camus and Phillipe Pagniez, *Isolément et Psychothérapie*

treated them strictly according to the rules laid down in the books of Hermes."

Later, in the same country, melancholiacs crowded to the temples of Saturn, where they sought cure from the ability and knowledge of expert priests.

In Greece medicine was first confined to the temples of Esculapius, and practised by the priests. According to Bernheim everything pertaining to the practises followed in the temples was pure suggestion. The location of the temples in out of the way, healthful places necessitated a pilgrimage to reach them. Entrance was strictly forbidden to all those who were not purified by ablutions. "The religious ceremonies and practises by means of which patients sought return to health, as a gift from heaven, varied in different periods. However, they almost always (particularly in acute, simple illnesses) sought to fire the imagination and re-establish health by a very strict régime.

This "firing of the imagination," to employ Sprengel's expression, was effected by quite a series of preparatory practises to which the patient was submitted: walks across the temple, offerings of sacrifices accompanied by musical instruments, prayers recited aloud, and especially conversation with the priests. The latter recounted to the pilgrims miracles already achieved by the god and "emphasized illnesses which had some connection with theirs."

Finally, sufficiently prepared, the patient lay down in the neighborhood of the temple, on the skin of the ram he had sacrificed, and awaited the oracle of the god which manifested itself in the form of dreams. "When the dreams sent by the god were ended," said Jamblichus, "we heard a muffled voice which instructed us what we should do. Sometimes this voice struck our ears in a state half way between sleeping and waking. Some patients were enveloped by an immaterial aura not perceptible to the eyes, but apprehended by another sense. It happened not rarely that it shed a soft and splendid light which caused the eyes to be kept half closed."

¹ Jamblichus, *De Myst. Egypt.*, sect. III, c. 2, p. 60. This belief in the virtue of dreams was shared by the most enlightened minds: Marcus Aurelius, for example, speaks of remedies which were indicated to him in dreams.—*Marc. Aurele, Œuvres. Traduco. Alexis Pierron*, p. 69.

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once prevented the including of cures of paralytics among miracles.¹ For him. "The influence of our imagination on our own body is incredible, especially among women. . . . It can produce disorders and cure those which it has produced. It has also the power of curing others."

"For diseases located in the humors," among which he includes the blood, or even those caused by an essential change in the humors, imagination will not bring about immediate cure; or even when there is an insufficiency or superabundance of humors, imagination will only cure in a crisis, or in conditions induced by a strong emotion, or even if there should be an instantaneous cure without crisis or strong emotion, the trouble would not be long in returning. Finally when it is the bones or tissues that the evil attacks, imagination will produce neither an instantaneous nor a progressive cure, unless it acts on the humors and they on the tissues."²

It has seemed interesting to us to report this instruction from a Pope, given a century and a half ago, and which remains in perfect conformity with modern scientific conceptions. And, since we are on this soil, it is not less curious to note, in connection with the miracles of Lourdes, that all enlightened minds, whatever form of religious belief they may share, recognize that a large part of the miracles arise from psychic action,* that the Catholic Church, if we believe the recent work of a doctor in theology, "does not impose on anyone the necessity of believing in the reality of apparitions described by Bernadette Soubirous, or in the cures produced at Lourdes."

The King's Touch

THE power to cure, at first attributed to the gods, belonged for many epochs to the kings, often considered as supernatural beings. Solomon, to whom tradition attributes a book, destroyed by Hezekiah, and which taught how to treat patients by natural means, had received from God, said Josephus, "the gift of appeasing

¹ Vacant, *doctor of theology*, article *Miracle*, *Dict. apol. de la foi cathol.*, par l'Abbe Jaugez, Paris, Delhomme et Brigueat. ed., p. 2079.

² Vacant *loc. cit.*, p. 2080.

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anger by prayers, and of exorcizing impure spirits from patients by conjurations. This method is still the one followed in our day."

"Vespasian, a sort of an improvised prince, was still wanting," said Suetonius, "in the majestic prestige which belongs to sovereign power: he did not expect it. Two men of the people, one blind, the other lame, presented themselves before the tribunal, begging to be cured because Serapis had assured them, during sleep, that the one would recover his sight if the emperor would impregnate his eyes with saliva and the other would recover the use of his legs if the emperor would touch him with his foot. Vespasian, not counting on any success, could not refuse to attempt the cure. His friends encouraged him. He experimented on both before the assembled people and succeeded.¹ He was a physician in spite of himself, entering upon his career, as he should, in the practice of his art, by means of miracles. Only the strokes of the wand were missing. Hadrian also cured a case of congenital blindness in Panonia by means of his touch.² Pyrrhus, King of Epirus, according to Plutarch and Pliny, cured affections of the spleen by gently pressing the left flank with his right foot."³

In the eleventh century the kings of England and of France pretended to use miraculous power in curing goitre and scrofula by simple touch.

Edward the Confessor, whose piety is extolled by all historians, first exercised this new art. Soon the kings of France claimed the same power, and Philip I had already made himself celebrated by his great skill in curing goitres.⁴ Besides by kings, the healing art has been claimed at all times by men who either considered themselves to be saints or believed themselves in possession of rare and mysterious knowledge, when they were simply nothing more than imposters, the list of which commences with Simon the magician, and is followed without interruption until the present time, including Deacon Francois de Paris, the Prince of Hohenlohe, etc. Their knowl-

¹ Suetone, *Les douze Césars Vespasien*, VII, Garnier, ed. 1893, p. 416.

² Fulgose, *Hist.*, l. I, c. 6.

³ Pliny: *Natural History*

⁴ Kurt Sprengel *loc. cit.*, t. II, p. 369.

edge was especially of oriental origin and formed what has long been known as occult science, rubbish, a mixture of religious ideas and superstition, amalgamated with Pythagorean ideas about numbers and foggy conceptions of the Orient on the nature of the world. Astrology, Cabalism, alchemy, are specimens of this foggy conception, real rubbish of brains, to use an expression of Rabelais. The ignorant man has always lived and still lives full of veneration for, and fear of these fictitious, inexact sciences. Then in all epochs there have been in vogue magicians, sooth-sayers, sorcerers, often suspected to be more or less associated with the devil.

Cures by Incantations and Mysterious Words

ALL cures due to suggestion being exercised by intervention of the miraculous, may be traced back to certain types of action. We have seen cures by dreams and by touch. We also find cures due to mysterious words: "Many cures are wrought by the help of trees and herbs, others by the knife, again others by the word, because the divine word is the surest means of curing sickness; by it the most perfect cures are obtained."¹ This is said in the Zend Avesta. Philo, member of the sect of the Essenes, calls the eternal word of God, the physician for all diseases.²

According to Coelius Aurelianus, Aulus Gellius and Julius Firmicus, sciatica and disease of the kidneys were treated most frequently by music or by enchanting voices.

Plotinus cured Porphyry, by means of magic words, when dangerously ill at Cape Lilybaeum in Sicily.³ Cato, the Censor, cured dislocations by secret words.⁴

At one time Chaldean words were employed because magic had been invented in Chaldea, and this language was considered superior to Ephesian words. This belief in the virtue of words is found again

¹ Zend. Avesta, Pi. p. 43.

² Philo. De Mundi opific. p., 5.

³ Eunap. vit. Sophist., ed. Comelin, in-8, 1596 p. 14, quoted by Sprengel.

⁴ Cato, De re rustica, c. 160.

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very much later. Francois de Piémont considers the recital of certain passages of the psalms of David as an infallible means of ending child-birth.¹

Even to-day sorcerers or village bone-setters do not disdain the pronunciation of certain mysterious words.

Then came cures from talismans, amulets, boxes, etc., whose origin is equally ancient, since their invention is attributed to Apollonius of Tyana: they were attached to the neck, after having mystic, sacred or barbarous words inscribed on them, and they were made use of against all sorts of sickness.

The frequent use of talismans dates from Paracelsus, who issued boxes conservative of celestial influences, and gave forth compositions of soothing ointments which cured wounds twenty miles distant.²

The Rosicrucians, who treated all sickness by faith and imagination had a sympathetic powder and a celestial plaster which instantly cured wounds, ulcers, hemorrhages and numbers of other maladies.³

D'Abano, in order to cure nephritic colic, taught that at the moment the sun passed the meridian, the figure of a lion should be traced by means of a lion's heart, on a golden plate attached to the neck of the patient.⁴

It was a rare talisman which borrowed its powers from astrology and metallo-therapy. Moreover, astrology, as everyone knows, played an enormous role in therapeutics, and in the 13th century they neither bled nor ever administered a purgative or an emetic without consulting the stars.

It is useless to add examples to show the importance of suggestion in methods involving the miraculous, and to speak of cures by philters, by signs designated cabalistic, by passes, by magnets and by animals. In this connection, however, we ought perhaps to mention the treatment that Gilbert of England praised as a cure for

¹ *Complem, Mesuae*, ed. Venet, in-fol., 1562, f. 312 b.

² *Bernheim*, loc. cit. p. 15

³ *Id.*

⁴ *Conciliator*, diff., x, f. 17 c., quoted by Sprengel.

lethargy, and which consisted of putting a sow in the bed of the patient."

Psychotherapy by means of magnetism, deserves our lingering a little longer, since it is through this channel that hypnotism arose. The theory of magnetism, dating from Paracelsus, conceived the existence of a universal fluid, bringing the stars and living beings in relation. Remodeled and altered several times, this theory laid down the principle that each man possessed an archæus, a kind of incorporeal agent that could be assimilated with the vital principle, and that this archæus was in secret relation with the archæuses of different beings. "Everyone possessed an attractive and hidden virtue, a magnes, permitting him, if he were healthy, to attract the magnes of sick people and to act by their agency on their archæuses, that is to say, on the principle of their vital force." (Pitres.) This hidden attractive quality was analogous to that of the magnet, hence the name magnetism.

The earliest cures attributed to magnetism were those of the plague: indirect to a certain degree, the cures were effected by means of balms and talismans charged with fluid.

During a part of the seventeenth century they discoursed on the existence, the nature, and the application of magnetism, and Gloucenius, Van Helmont and Robert Fludd formulated the doctrine in opposition to Father Kirchner. William Maxwell, a Scotchman, a follower of Fludd, upheld animal magnetism energetically. For him sickness was accounted for by the exhaustion of the vital force, and those who knew how to act on this force by calling to their aid the universal force existing in light, could cure sickness, even at a distance.

At the end of the eighteenth century, the enterprising adventurer, Mesmer, determined to make a place for himself by some means or

¹Gilberti anglici compendium, 1519, f. 108 b., quoted by Sprengel. This practice, probably inspired by the idea of making the sickness pass into the body of the animal was derived from the method of transplanting, which consisted in causing the ailment to go into a tree. It has not yet completely fallen into oblivion; one of us knew a patient in the country who kept a litter of young dogs in bed with him some days in hope of being relieved of his suffering. There is in this odd practice a reflection of rudimentary ideas on the possibility of transmitting by contagion affections of animals to man and vice versa.

tion made the patient desire a remedy which was ordinarily inefficacious, it acquired a very favorable power; thus a patient may be calmed by magic ceremonies, if he is persuaded they will effect a cure." In the course of ages physicians have often forgotten this wise remark of one of the fathers of medicine, and they have taken away the role of the imagination, or they have considered the time for miracles past, as that author of an article in the Dictionary of Medicine who, in 1821, wrote: "Fortunate it was when genii and even the invoked divinity or the deity enveloped in sacred shields served to render human beings exempt from all ills."..The application of an abraxas caused ills to vanish by enchantment...What can our medicine of to-day do in comparison with these miracles? Will you order manna or jalap? Examine the purulent sputa and the fetid dejecta? Oh, how much more brilliant is the talismanic medicine! Its methods are entirely celestial, rays of the divinity, astral radiations, suddenly coming to render energetic aid to a soul vanquished in a dead body; the suffering one rises full of vigor and takes up the threads of life again, etc."

It ended by declaring that in this perverse century "we are incurable because we don't believe anything." He was right, faith is indispensable, but he exaggerated, it is not dead, nor even sick, happily, since it is the only element of success in these practices.

The Faith that Heals is Always the Same

IF the theories regarding psychotherapy by means of the miraculous have been numerous, if the explanations of observed facts have been still more numerous, the methods employed have in their entirety been very little varied and are brought back to a few types. They cured by contact, passes, a look, words, amulets,¹ dreams. . . . We still cure by the same methods. The curious thing is that not one of them has completely disappeared. All physicians can recall the

¹ See Bernheim, *Revue Med. de l'Est*, 1881-1882 et *Hypnotisme*.—Braid had already shown that the influence of magnets, metal substances closed up in sealed tubes, were by nature suggestive.

See Milne Bramwell "Revue de hypnotism 1881. James Braid,—œuvre et ses écrits."

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(7) That from earliest times down through the Middle Ages, mystics, sorcerers, and members of secret societies, as the Rosicrucians, have performed cures by signs, mysterious words and incantations.

(8) That the theory of healing by animal magnetism, dating from Paracelsus, and used by Mesmer in the last half of the 18th century, was discredited in 1784, by a commission of French physicians. They explained Mesmer's cures as due (a) to contact, (b) to imitation and (c) to imagination.

Notes and Collateral Reading

[The numbers refer to pages in the text]

55. *The Faith that Cures*.—"The physical effect of faith" is to be directly connected with the control of the emotions. As Dr. George E. Gorham says, "The functional activities of the unconscious life are not under the control of the will, save as the emotions are affected by the will." "One can not will the heart to cease or increase its regular beat." "One can not will that the process of digestion shall not go on." "The processes of unconscious life are under the control of the sympathetic nervous system and most of them go on independent of thought and are unrecognized by it." As fear especially interferes with the normal ongoing of the processes, so a faith that expells fear promotes them.

—H. C. King, "*Rational Living*," pp. 83-84.

58. *From psychic action*.—Magicians of all kinds are to be found, if one searches, casting out demons and calling on the name of the Lord. There are sudden healings of paralysis by the ancient method of prayer and faith; there are the miraculous relics of the saints, the shrines, and fountains; there are mesmerists, evangelists, and crowing little prophets on all sides. Charlatans or genuine believers—who can tell what does not preside at their thinking? The world is full of tradition and hope.

By the side of, or in the wake of, more or less mystical practices, a school of physicians has appeared, who combine with their medical treatments a serious attention to the mental condition of their patients. They treat nervous disorders by suggestion, they consider a great many disorders as nervous, which were not formerly considered so, and use suggestion as a help in the treatment of other troubles. These physicians proceed humbly in the path which a strict science points out. They have found that one truth which underlies the various visions of the enthusiasts. We may safely aver that the whole movement will resolve itself into a momentous reform in the practice of medicine.

—Max Eastman, in the "*Atlantic Monthly*," May, 1908.

The Next Article

EDITOR'S NOTE:—Prof. R. S. Woodworth began his series of articles on the activities of the nervous system, viewed as the psychological mechanism, Issue 2, supplementing Dr. Frederick T. Simpson's article on how the nervous system is organized, and Dr. Isador H. Coriat's article which described the several main divisions of the nervous system. Prof. Woodworth, in his first article, describes the special nerve centers located in the brain and spinal cord, each with its own work to do, one to control muscles used in breathing, one to control the cardiac muscles, etc. These, he says, are so thoroughly interconnected that they are like one center. He says: "The special centers have a large measure of local independence in simple affairs, but a high degree of interdependence in matters that are more difficult or general. There is apparently no arch center, but any one, if its activity becomes great enough, can dominate all the others. . . . Thus, the conception of the nerves as a centralized system of lines of communication between all parts of the body lies at the very basis of psychotherapy, and the fact that the nerve impulses coming down from the brain can reinforce, modify or check the activity of the special centers . . . shows us something of the operation of the mental influence." In the second article, he describes how the nerve centers with special duties, such as conveying impressions of sight, taste, hearing, etc., to the brain, are localized in the brain and spinal cord.

In this article Prof. Woodworth takes up the natural activities of the nervous system and shows how the influence of mental states on bodily functions is brought about. He shows that the psychotherapist's task is two fold, for he must find what the bodily effects of mental states are, and he must learn how to excite states of mind that are favorable and how to drive out unfavorable states. He concludes by showing that the means one mind has of influencing another is its sympathy with the other's emotions and ideas.

PSYCHOLOGICAL SECTION
ARTICLE IV

How the Psychological Mechanism Works¹

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HAT the student of psychotherapy requires from psychology first of all, is something as to the way in which mental acts or events, such as ideas, beliefs, desires, emotions, and acts of will, operate on bodily functions to their benefit or injury. Two broad general facts may at once be stated. First, the influence of mental acts on the body is not an exceptional freak of nature, but quite the rule, and quite in accordance with the position of mind in the animal economy. Second, the mechanism by which these effects of mind on body are carried out is not itself mental, but physiological. Perhaps a third fact should be added without delay: you could not tell, from observing a mental event, what bodily consequences it would have, nor could you tell, from observing a bodily change, from what sort of mental event it resulted. That is to say, you could not tell without previous observation of the connection of particular mental processes with particular bodily effects. Let us take up these points in more detail.

That the influence of our thoughts and feelings on our bodily processes is common enough can easily be shown by examples. First, what are called the voluntary muscles—those of the limbs, neck, face, tongue and larynx—are, to a great extent, the servants of the mind. They are indeed capable of reflexes, with which the mind has little to do; but usually their action is connected more or less closely

¹See note under, "The Next Article" or preceding page



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with what is going on in consciousness. We are so much accustomed to this high degree of dependence of a part of our bodily functions on mental processes, that we think little of it; it seems, from long use, almost self-evident. We are more interested in what seem the mysterious influences of the mind on circulation, digestion, and other internal processes. These functions are not ordinarily subject to our wills, but they are none the less constantly influenced by our mental states. Here, for example, is a man sitting contentedly after a meal, his muscles relaxed, his heart beating along regularly, his stomach, if we could see it, going through a rhythmical series of movements which churn the food and mix it with the gastric juice as it oozes out from the stomach wall—all in all, a picture of normal bodily function, which is decidedly favored by the contentment of his mind. Of a sudden, he springs up in evident excitement, his heart, after stopping for a few seconds, beats rapidly and violently, the blood rushes to his face, perspiration breaks out on his skin, his stomach stops churning the food and supplying juices for its digestion—in a word, his internal functions are generally upset, and all because something has reminded him of an important engagement to which he ought to be attending at this very moment.

Such an experience illustrates each of the three propositions laid down above; for it shows how wide a bodily effect may result from a mental cause, and certainly we could not tell that this cause would have this effect, or that this effect would result from such a cause, except by empirically observing their connection. Moreover it is clear in this example that the mental part of the process extends only a little way; the thought of the missed engagement is a mental fact, but all the operation of this mental event on the bodily organs lies outside the realm of consciousness, and is purely physiological, except, indeed, as the man receives sensations from his flushed face, throbbing heart, and disturbed digestion, and is disagreeably affected by them. The bodily effects are carried out by a physiological mechanism; and it is because the mind, the psychological mechanism, is all of a piece with the physiological mechanism, that it has these influences on bodily organs.

In low forms of animals we see very little evidence of what we

tion made the patient desire a remedy which was ordinarily inefficacious, it acquired a very favorable power; thus a patient may be calmed by magic ceremonies, if he is persuaded they will effect a cure." In the course of ages physicians have often forgotten this wise remark of one of the fathers of medicine, and they have taken away the role of the imagination, or they have considered the time for miracles past, as that author of an article in the Dictionary of Medicine who, in 1821, wrote: "Fortunate it was when genii and even the invoked divinity or the deity enveloped in sacred shields served to render human beings exempt from all ills."...The application of an abraxas caused ills to vanish by enchantment...What can our medicine of to-day do in comparison with these miracles? Will you order manna or jalap? Examine the purulent sputa and the fœtid dejecta? Oh, how much more brilliant is the talismanic medicine! Its methods are entirely celestial, rays of the divinity, astral radiations, suddenly coming to render energetic aid to a soul vanquished in a dead body; the suffering one rises full of vigor and takes up the threads of life again, etc."

It ended by declaring that in this perverse century "we are incurable because we don't believe anything." He was right, faith is indispensable, but he exaggerated, it is not dead, nor even sick, happily, since it is the only element of success in these practices.

The Faith that Heals is Always the Same

IF the theories regarding psychotherapy by means of the miraculous have been numerous, if the explanations of observed facts have been still more numerous, the methods employed have in their entirety been very little varied and are brought back to a few types. They cured by contact, passes, a look, words, amulets, dreams. . . . We still cure by the same methods. The curious thing is that not one of them has completely disappeared. All physicians can recall the

¹See Bernheim, *Revue Méd. de l'Est*, 1881-1882 et *Hypnotisme*.—Braid had already shown that the influence of magnets, metal substances closed up in sealed tubes, were by nature suggestive.

See Milne Bramwell "Revue de hypnotisme 1886. James Braid,—*monter et ses écrits*."

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is replaced in the cage, an observer would judge at first that it had learned nothing from its previous experience, for it goes through the same range of movements, and gets out again by accident. But as the experiment is repeated time after time, one can see that some process of selection is going on, for the variety of reactions becomes gradually less, the useless movements slowly disappear, until finally selection is complete, and only the one movement that succeeds is made. The process has been slow, but the final result is a complete mastery of that particular situation.

If we look back over the process, we see no evidence that the cat at any stage gained an insight into the conditions of success; nor has there been any sign of pausing to reflect. There is no sign of any mental process intervening between the stimulus and the motor reaction. The animal has gone at it in a blind, impulsive way; yet he has somehow learned; and this blind method of learning is indeed the fundamental method, on which the more intelligent methods are based. This method is called "learning by trial and error;" it might also be called learning by gradual selection from varied reactions.

Man's Addition to the Process of Reaction. Reflection and Intelligent Reaction

A MAN placed in a novel situation shows the same tendencies as the animal. He tends, first of all, to do something, to react. If his first reaction is unsuccessful, he tries again, putting in more force, or changing his point of attack. He makes varied reactions. When one of these succeeds, he is very apt not to notice exactly how success came, and he may have to attack the same situation, when it recurs, as blindly as at first. He may, indeed, in some cases, depend as completely as the animal on the gradual selection of the successful reaction. But we also often observe, in man, a mental process intervening between the sight of the novel situation and the motor reaction. He is reminded of some other situation formerly met with, and reacts in the light of it. He makes some guess as to how to reach success, and tries out his guess. He forms a plan

of action and acts accordingly. He may get a real insight into the situation, and act from the start with assurance of success. There are several things to be noted about this intelligent mode of reaction. First, it depends on past experience. Facts previously noted are called up and used as suggestions for present reactions. Second, it depends on discrimination, or picking out of the total situation certain features which are important for the purpose in hand. Third, it calls for a temporary suppression of the tendency to motor reaction. This is difficult, since it runs counter to the strong impulse to be doing something, but it is necessary in order to give time for ideas to come up and suggest promising reactions.

The attitude of reflection is quite opposed to the attitude of varied motor reaction. As to the effects of this mental way of grappling with a situation, we should notice that when a man plans out his reactions before executing them, he has a much better chance of observing and remembering which were successful and which failures, so that a single success is often enough to teach him how to react. This method of learning by ideas is, therefore, a speedier method than that of trial and error. But there is another fact to be remarked; for by noting features of a situation in the light of former experience, one comes to have a conception of the situation, an idea of it which may be brought to mind on some future occasion, in another situation having some similarity with the present. Probably it is in this way that ideas take their rise.

Influence of Mind Over Body in Accordance with the Laws of all Animal Life. The Task of the Psychotherapist

MIND, then, does not develop in isolation, and apart from bodily needs. It is not a luxury, but comes in to enable the animal to react more suitably. Though reflection and deliberation require the temporary suspension of motor reaction, they lead finally back to movement. If they did not, mind would have no biological importance. The influence of mind over body is, therefore, not to be regarded as something extraordinary and surprising, but as regular and essential. Mental processes are superimposed,

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a bad effect on the bodily functions, and that a cheerful frame of mind and interesting work have a good effect. So much we know from common experience. But there are many more detailed and specific effects of the mind on the body which we do not know without careful study. The task of the psychotherapist is thus twofold—to discover the bodily effects of various mental conditions, and to discover how to arouse the favorable states of mind, and how to drive out the unfavorable. Since individuals are by no means all alike in these matters, the psychotherapist has need of a generous measure of the power of sympathetic observation.

Thought and Action; Danger of Lack of Action

THE relation of thought to motor performance is interestingly brought out by considering the common debating society antithesis between "men of thought" and "men of action." There is no fundamental opposition between the two, since thought tends to lead to motor action. The engineer and the physician are typical examples of men of practical activity whose action is governed by thought. Yet there is a partial or temporary antagonism between thought and action, since motor activity is held back to give time for thought. The reflective person feels that it is useless to act till consideration has shown the best thing to do. There are many persons who go too far in the reflective attitude, not that they think too much, but that they get too much into the habit of suspending decisive motor action. They become so enamored of the inner life to reflection that they may have a real dislike for decisions and actions. Emotion, like thought, leads in the perfectly normal man of action; but here again, some persons form the habit of leading a life of emotion, often of what seems very noble emotion, without ever performing the good deeds which the emotions would naturally lead to.

Professor William James has called attention to the demoralizing effect that such an absorption in mere emotion has on the character. Now in individuals of the neurasthenic type, this weakening of the active side of mental life may run into genuine disease. A condition of abulia or lack of will power may result, a condition in

and feelings from various sources, discrimination is the partial breaking up of this blend by separating out some of its components, while the tendencies left behind by previous experience are summed up in the law of association.

Experience comes to us blended; mental work is necessary to break it up into its elements. Fusion is easy, discrimination hard. At any given moment, a vast number of sensory impressions are simultaneously made upon us. The eyes furnish a multitude of patches of light, shade and color; the ears are affected by a variety of sounds; the senses of taste and smell may be undergoing stimulation, and there are many impressions coming from the skin, joints, muscles, and internal organs. The adult, after all his years of training in noticing sense impressions, can separate out each of these elements as they are mentioned; but the child undoubtedly has to learn to do this, and the adult ordinarily does it only to a limited extent. Most of the impressions which are simultaneously made upon us, are felt as a blended total, not having in consciousness distinct parts corresponding to the separate causes that have produced them.

That special training is needed to enable us to break up a blended total into its parts is well illustrated by the difficulty of holding apart the sense of taste and smell. We are accustomed to speak of a great number of tastes; but psychology assures us that there are but four: sweet, sour, bitter and salty, with possibility of two more. To convince us of the truth of this position, it is only necessary to prevent the circulation of air and vapors through the nose by pinching the sides of the nose together, and to have some one introduce into the mouth coffee or quinine, which then cannot be distinguished, or apple or onion pulp, which also taste alike. It turns out that the numerous so-called tastes are in reality fusions of taste and smell, fusions which we have never learned to break up.

A chord in music affords another example, for special training is needed before we can analyze it into the separate notes of which it is composed. A melody affords a similar example, for it by no means seems to us a mere succession of distinct sounds, but rather as a blended whole, in which any given note, such as "middle C," has a

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different value and a different effect on us according to the notes that precede and follow it. A chord is an example of the fusion of simultaneous impressions, a melody of that of successive impressions. Another example of the latter is found in the sight of a moving body, such as a person walking. Till the invention of instantaneous photography, we had no notion of the curious positions assumed by a person in the act of taking a step; and even now it is hard to believe that we continually see people in these positions. If a series of instantaneous photographs is taken in rapid succession, and these views shown in like rapid succession, we see a "moving picture," in which we can not easily distinguish the separate views. What is objectively a series of discreet facts becomes in our consciousness a blend.

Discrimination Necessary to Intelligent Action

THE state of fusion is easy and comfortable, and has an aesthetic value, but it is intellectually bad, because it does not represent facts as they are; and it leads to many illusions and errors of judgment. Intellectual growth in the individual, intellectual progress in society, consists in partially breaking up the fused mass, by singling out one or another item for attention. The intelligent method of reacting to a situation, and of learning to master it, which was spoken of on an earlier page, requires some degree of analysis of the situation, some singling out of features that may offer a point of attack. Discrimination is necessary for intelligent action, and leads to the development of exact ideas. Discrimination itself results, probably, from two causes, natural interests and previous experience. The baby, among all the sights that assail his eyes, is interested in bright objects, moving objects, sharp contours. These are singled out from the mass of sensory impressions, and give him his start toward a knowledge of definite things. In the youth, at a certain age of his development, there germinates an interest in the opposite sex, and this interest leads him to observe many details long present to his senses, but never before perceived. Among more intellectual interests may be mentioned those in likeness and con-

trasts, and in cause and effect. New interests are constantly being generated, during the period of mental growth, by association with interests already existing—but here we begin to trench on the influence of past experience.

The importance of past experience in the development of discrimination is seen at its simplest in the case of a man confronted by a puzzling situation. If he has ever experienced a situation similar in any respect to the present, he is apt to be reminded of that past experience, or, even if he does not clearly recall his previous experience, he is apt to see the new situation in the light of the past, which means that the feature of the present situation which resembles the past is likely to become prominent and thus be discriminated from the total present. When many situations, or, let us say more simply, when many things, differing in all other respects, have one property in common, this property is likely to be shaken loose, so that one becomes clearly aware of it. Thus the child who is shown all kinds of things that are alike in color, comes to single out the quality of color and form a definite conception of it. Especially is this true if some one supplies him with a name for it, to fix it in his mind. Names are means by which discriminations and conceptions laboriously acquired by one individual, are made easier for those that come after him. Discrimination would not progress far were it not for the accumulated effect of past experience.

Association

THE influence of previous experience in directing the course of thought can well be observed, if one notes down the thoughts that pass through the mind for a minute and then asks why this idea should have followed that. It will often be found that the ideas which now come close together have been present together in some previous experience. Thus the odor of a flower may lead to the thought of a place where the flower was once smelt, the thought of the place may lead to the thought of a person met there, the thought of the person may lead to the recalling of his name. When two items are experienced together, as the appearance of a person and his

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name, their simultaneous presence breeds some kind of association between them in the brain, the exact physiology of which is unknown, though attractive hypotheses have been offered in explanation. This is called "association by contiguity." The more attentively the two items have been considered, the more closely they have been thought of in relation with each other, and the more vivid the whole experience has been, so much the more strongly is the association impressed. The association left behind by a single experience may be too weak to be effective later, as is seen in the fact that a single reading of a poem will not usually store it in memory. But the single experience has not been without effect; something has been retained and, if the experience is often repeated, the effects of the different experiences are added together, till finally the association is strong enough to be operative. Frequency of repetition leads to the formation of a mental habit, which may become so strong that the passage from one idea to its associate is prompt and almost inevitable. The adult is almost compelled to think as he has been accustomed—a fact which has both its good and its bad sides.

A weak association can be strengthened by a fresh experience of the connected facts, in which the two are simultaneously presented, while the observer remains almost passive; but it is more strengthened by actively using the association as it already exists, by depending on it to lead from one fact to the other.

A weak association dies away if it is not strengthened by exercise or reenforced by repeated experience; and even a strong association, though it may persist for years in a dormant state, becomes less prompt and ready for use, and may be wholly unusable until revived by fresh experience. Many facts we retain for a few seconds, comparatively few for an hour or a day, still fewer become permanent acquisitions. The more recently an association has been formed or exercised, the more likely it is to be effective in directing the course of thought.

The main law of association by contiguity, with its subsidiary laws of frequency, recency, etc., which have been briefly stated, expresses the fundamental fact of the influence of past experience on the present course of thought. It not only controls

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many names begin with the same sound; but acting together, the two associative tendencies are effective.

This sort of thing is seen in all speaking, for the stream of words is partly directed by the ideas to be expressed and, partly by the lingo of the words themselves. In reading or in listening to another person speak, the idea that arises in us with each new phrase is determined partly by the phrase itself and partly by the ideas that have just been called up in the listener's mind by the preceding sentences. All serious thinking depends on this compound association. The man who is thinking in a businesslike way has some definite object in view; he wishes to recall a fact, or to balance his accounts, or to find the solution to some problem that confronts him. His object in view is a controlling influence in his thought and, if its influence is strong enough, it prevents mind wandering and holds the thoughts to one line. The purpose is part cause in directing the course of purposive thinking, but it is clearly not the entire cause, for desiring the solution of a problem is not the same as getting it. Other associative tendencies must co-operate. Effective thinking calls for good "team work," and that is one reason why it is so difficult; another reason is that it makes demands on that highly energetic and strenuous function, discrimination.

Emotions, as well as purposes and other ideas, control the course of thought by combining their influence with that of associative tendencies left behind by past experience. If a man is elated, everything suggests to him cheerful thoughts; if depressed, quite the opposite. He who is fiercely resentful at another sees wrong in his every action; he who is in a panic of fear derives assurance from no number of reassuring circumstances. You can not argue with anyone who is under the stress of strong emotion; his mind is not open, it is not free to move along the lines of association into which you would direct it, but is rigidly constrained within a certain narrow groove. If, however, you wish to convince him of something in the line of his emotion, you have chosen an easy task.

Just as one thought is linked to another, by virtue of past association between them, so the thought of an object is linked to a sense stimulus which has in the past been connected with that object,

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and the sense stimulus means for us that object; that is, we *perceive* the object when the sense stimulus affects us. Perception depends on association. The same is true of movement and other bodily effects of ideas.

How Mind Influences Mind in Psychotherapy

SINCE psychotherapy depends on the influence of one mind over another, it will be proper, in closing, to notice how this influence is exerted. The general principle is that you work on another's mind only by making it work. It works according to its own private mechanism. You cannot introduce ideas bodily into it—aside from telepathy, which at best is exceptional and not to be depended on as a practical means of influencing other minds. The best you can do is to provide proper stimuli and leave the rest to the individual's interests and ready-formed associations. Even in hypnosis, where the superficial appearance is certainly that one mind is directly controlled by another, the fact seems to be that one mind is drowsy, receptive and uncritical, and that the other presents certain stimuli which lead on to ideas which are readily suggested by the stimuli used, but which would be rejected as absurd, if the subject were awake and critical. The man who knows how to influence another understands how to set that other's mind going. He knows how to work through the other's emotions, interests and habits of thought—all of which have a powerful influence on the course of thought. He knows the value of frequent repetition in forming new habits of thinking and, the power of intense experiences to lead to the same result. He utilizes one associative tendency to reenforce or counteract another. He has the perception to see when his subject's mind is ready for a further step. He arranges situations so as to lead to the discrimination of something new and important for his purpose. In short he has the insight, tact and skill to apply to the living mind of another person the laws of discrimination and of association which have been rather abstractly set forth in the preceding pages.

Editor's Summary

(1) Prof. Woodworth begins his article with two broad, general statements; (a) that the influence of mental acts on the body, is not exceptional, but quite within the ordinary, and (b) that the mechanism by which its effects are accomplished is not psychological, but physiological. He then adds a third fact, (c) that you can not tell from knowledge of a mental event its bodily consequences, nor, vice versa can you tell the mental event from observing a bodily change.

(2) Taking up these points in detail, he shows (a) that the voluntary muscles controlling the limbs, etc., are the servants of the mind, and (b) that the involuntary muscles controlling digestion, etc., though not ordinarily subject to our wills, are, none the less, constantly influenced by the mental state. He shows also, by an instance, that these effects are carried out by a physiological mechanism.

(3) As a help to understanding the mental mechanism and the part it plays on the body, he observes the simplest, most lowly forms of living beings and their varied reactions. These lowly forms of life show no after effects, when they have had an experience that has caused them to react, nor do they retain any memory of it.

(4) Higher forms show ability to learn in a blind way. On this blind ability the more intelligent methods of learning are based.

(5) Man shows the same tendencies to react that are found in animals, but has power of criticising his tendencies to react and therefore can make intelligent progress.

(6) Prof. Woodworth points out that mind does not develop in isolation. It grows in action. Bodily needs called it into being. It is there because the animal must have it so that it can supply its needs more suitably. Reflection and deliberation involve only temporary suspension of activity. They also lead back to movement. Mind is, therefore, in its workings not extraordinary, but regular and essential to the bodily economy.

(7) Worry and mental idleness plainly have an ill effect on the bodily functions. Prof. Woodworth states that the psychotherapist's task is twofold. He must find out (a) the bodily effect of various mental conditions, and (b) how to excite favorable and drive out unfavorable mental states.

(8) Prof. Woodworth gives three keys to assist in opening to us the inner workings of the mental mechanism. These are *fusion*, *discrimination* and *association*. By fusion he refers to the blend in the mind of many impressions made at the same instant, those of taste, smell, sight, hearing, etc. By discrimination he refers to the faculty of the mind by which it picks any element out of the fusion or blend for separate consideration. Discrimina-

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"Religion and Medicine," by Drs. Worcester, McComb, and Coriat, 1908; "Health and Happiness," by Bishop Samuel Fallows, 1908; "Emmanuel Movement in a New England Town," by Rev. Lyman P. Powell.

Various popular phases of the movement to utilize psychotherapeutic influences are dealt with in the following articles:

"The New Art of Healing," by Max Eastman, *Atlantic Monthly*, May, 1908; "The Powers of Men," by William James, *American Magazine*, November, 1907; "The Spiritual Unrest," by Ray Stannard Baker, *American Magazine*, December, 1908, January, 1909; "Psychotherapy, with some of its Results," by Beatrice M. Hinkle, M.D., *Journal of the American Medical Association*, May 9, 1908; "New Phases in the Relation of the Church to Health," by Richard C. Cabot, M.D., *Outlook*, February 29, 1908.

A series of articles by Rev. Elwood Worcester, D.D., Ph.D., in the *Ladies' Home Journal* (these began in December, 1908).

A series of articles are appearing in *Woman's Home Companion*.

Glossary

Abraxas, a genus of lepidopterous insects; the gooseberry span-worm.

Acedia, despondency.

Amaba, a genus of very minute protozoan animals consisting of a mass of naked protoplasm and capable of changing their form at will.

Archæus (archeus), astral body of Paracelsus.

Cyanosis, a blue coloration rising from some temporary or non-organic cause; also a blue color of the skin resulting from a congenital malformation of the heart or some defect in the pulmonary circulation.

Galvanic, electric.

Hydroscopic, water divided into minute drops.

Nidus, a nest; a point or focus suited for the development of germs; a pocket in which pus may be hidden; a small collection of ganglion cells constituting a nerve center within the mass of a larger ganglion.

Edema, a swelling from the effusion of serous fluid into the cellular substance.

Peristalsis (to wrap up), the peculiar movement of the intestines and other tubular organs like that of a worm in its progress by which they gradually propel their contents.

Sciatic nerve, a nerve trunk running down the back of the thigh.

Sciatica, neuralgia of the sciatic nerve.

Vascular, having or relating to vessels.

Vegetable organs, organs which contribute to growth or nutrition or reproduction, but have no properties of animal life.

Vermicular, worm-shaped.

Vagus, the triangular space below inferior fovea; floor of the fourth ventricle corresponding to nuclei of pneumogastric and glosso-pharyngeal nerves.

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Wordsworth, quoted, 43.
Will and feelings, 20.

PSYCHOTHERAPY

A COURSE OF READING IN SOUND PSYCHOLOGY, SOUND MEDICINE, AND SOUND RELIGION

Announcement



THIS Course of Reading is educational in purpose. It will present the various phases and aspects of the subject in the most authoritative and readable form, from the pens of scientists, divines, and philosophers. The physiological, psychological, religious, and historical divisions of the subject will be treated impartially and adequately.

Psychotherapy means "the attempt to help the sick through mental, moral, and spiritual methods."

Few movements in the history of mankind probably have been of more vital significance than that now on foot in America to put psychotherapy to effective use. So vast and beneficent have been the results of the union of religion, medicine, and psychology for this purpose that further knowledge and use of it are at once a duty and a privilege. In it leaders in science and in religious thought—two of the greatest forces of civilization—are coöperating to relieve suffering and widen life. It remains to be seen how this coöperation can best be made effective.

HISTORY

Psychotherapy is as old as the beginnings of medicine. In its present methods it is older in Europe than in America. It began there about twenty-five years ago with the investigations of Charcot and his school, Janet, Freud, and others. It has been further carried on in this same direction and in its practical applications by Liébeault, Bernheim, Forel, Dubois, Lloyd Tuckey, Vogt, and many others. In this country it has been advanced by the practice and investigations of, among others, Drs. Weir Mitchell, Morton Prince, Boris Sidis, James J. Putnam, Richard C. Cabot, Lewellys F. Barker, and Frederick Peterson. It has been attended with popular and religious movements which originally grew out of the psychological and medical studies, but which have developed along popular lines.

These movements include such varied and opposing growths as Christian Science, Faith Cure, New Thought, and the Emmanuel movement. The last-named movement was taken up at Emmanuel Church, Boston, and as a form of church work has been carried on in churches in Chicago, Rochester, Cambridge, Northampton, Waltham, Newark, Detroit, Buffalo, Brooklyn, and elsewhere. The underlying truth contained in these popular mental and spiritual healing movements is embodied in Psychotherapy.



PAUL DUBOIS, M.D.,
Professor of Psychotherapy, University of
Berne.

PSYCHOTHERAPY—A COURSE OF READING



JAMES JACKSON PUTNAM,
M.D.,

Professor of Diseases of the Nervous System,
Harvard Medical School.

AIM OF THE COURSE

This Course will aim not only to inform all who read it of what is the essential truth of the various mental healing movements, but it will aim also to widen life by increasing the mental and spiritual resources of its readers. While on the one hand it will be scholarly, searching, and authoritative, it will on the other hand be positive, instructive, and stimulative. The many aspects of the subject will be cast in striking, readable, and attractive form.

PLAN OF THE COURSE

Considered in broad outlines, the Course will deal with the subject under five general divisions and will present its various phases in an orderly and progressive manner. The divisions to be taken up are:

1. General or Descriptive.
2. The Physiological, including the neurological.
3. The Psychological.
4. The Religious.
5. The Historical.

Each number of the Course will include articles under these divisions, so far as practicable, advancing in the consideration of each till it has been completely dealt with.

CONTRIBUTORS

Among the contributors to the general or descriptive section of the Course are:

James Jackson Putnam, A.B., M.D., Professor of Diseases of the Nervous System in Harvard Medical School.

Professor Putnam will contribute a series of articles, about ten in all, dealing not only with neurological and psychological topics, but presenting also some of the broader philosophical aspects of the subject which make a strong appeal to the general reader.

Richard C. Cabot, A.M., M.D., Instructor in Medicine in Harvard Medical School. Author of "Clinical Examination of the Blood"; "Serum Diagnosis of Disease"; "Physical Diagnosis"; "Psychotherapy and its Relation to Religion," etc.

Dr. Cabot will contribute a series of articles, including ten or more, correlating the three great elements which enter into the subject—Medicine, Religion, and Psychology.

John Warren Achorn, M.D., an eminent physician of Boston, with special knowledge of hygienic matters, will write on "Hobbies as a Help to Happiness."



JOSEPH JASTROW, PH.D.,
Professor of Psychology in the University of
Wisconsin.

ANNOUNCEMENT OF THE COURSE

PHYSIOLOGICAL SECTION

The Physiological Section numbers among its contributors:

Frederick Peterson, M.D., Professor of Psychiatry in Columbia University. Ex-President of the Neurological Society. Author of numerous articles on ailments of the mind and nerves and joint author of "Nervous and Mental Diseases."

Dr. Peterson will write on "The Effects of Emotion on the Body."

E. E. Southard, A.M., M.D., Assistant Professor of Neuropathology in the Harvard Medical School.

Professor Southard will write on "The Histology of Nervous Ailments"—a subject to which he brings the results of special investigation.

Isador H. Coriat, M.D., Assistant Physician for Nervous Diseases, Boston City Hospital. Joint author of "Religion and Medicine."

Dr. Coriat, who has been Consulting Neurologist to the Emmanuel Church movement, will contribute

an article to the second number of the course on "The Anatomy of the Central Nervous System," and later articles on Psychoanalysis and other topics for which he has had special training.

Beatrice Hinkle, M.D., of New York. Dr. Hinkle, who has for years applied psychotherapy successfully in connection with her practice as a neurologist, will write on "Methods in Suggestion."

Frederick T. Simpson, M.D., Visiting Physician to the Hartford Hospital; Lecturer, 1907-8, on Psychotherapy at the Hartford Theological Seminary.

Dr. Simpson will contribute articles dealing with hysteria, drug addictions, and other psychoneuroses.

John E. Donley, M.D., a distinguished neurologist of Providence, R. I. One of the editors of the *Journal of Abnormal Psychology*.

Dr. Donley will write on the subject of "Obsessions."

M. A. Bliss, M.D., an eminent physician of St. Louis.

Dr. Bliss will deal with psychotherapy and digestion.

Frank K. Hallock, M.D., Cromwell, Conn., the well-known nerve specialist, will contribute a paper on methods of recovery.



RT. REV. SAMUEL FALLOWS,
LL.D.,
Presiding Bishop of the Reformed
Episcopal Church.



FREDERICK PETERSON, M.D.,
Professor of Psychiatry, Columbia University.

PSYCHOTHERAPY—A COURSE OF READING

PSYCHOLOGICAL SECTION

The third or Psychological Section of the subject will contain articles by:

Josiah Royce, Ph.D., LL.D., Professor of Philosophy in Harvard University. Author of "The Spirit of Modern Philosophy," "The World and the Individual," "The Conception of God," etc.

Professor Royce will write on "Idealism and Spiritual Health."

R. S. Woodworth, A.B., Ph.D., Adjunct Professor of Psychology in Columbia University.

Professor Woodworth will write on "The Physiology of the Central Nervous System" and "How the Psychological Mechanism Works."

James R. Angell, A.M., Professor of Psychology in Chicago University.

Professor Angell will write on the relationship of mind and body in Psychotherapy.

Joseph Jastrow, A.M., Ph.D., Professor of Psychology in the University of Wisconsin. Author of "The Subconscious."

Professor Jastrow will write upon this most interesting subject upon which he is recognized as a foremost authority.

Sigmund Freud, Professor of Neuropathology in the University of Vienna.

Dr. Freud will write on "The Method of Psychoanalysis in Psychotherapy," a method which he has specially developed.

John Milne Bramwell, M.B., C.M., Author of "Hypnotism," etc.

Dr. Bramwell, who is probably the first English authority on hypnotism, will deal with topics related to this subject as involved in psychotherapy.

Charles Lloyd Tuckey, M.D., late Visiting Physician to Margaret Street Infirmary, London. Author of "Psychotherapeutics."

Dr. Lloyd Tuckey's book was the first in English on this subject, on which he is probably the most important authority in England. He will write an article on "How Suggestion Works."

Paul Dubois, M.D., Professor of Psychotherapy at the University of Berne. Author of "Psychic Treatment of Nervous Disorders."

Professor Dubois is the well-known Continental authority on psychotherapy and his book is largely responsible for the present awakening on the subject. Professor Dubois will write on "Persuasion as a Remedy in Nervous Ailments."



REV. LORING W. BATTEN,
Ph.D.,
Professor of Old Testament Literature and
Interpretation in the General Theo-
logical Seminary, New York.

JOSIAH ROYCE, Ph.D.,
LL.D.,
Professor of Philosophy, Harvard
University.

ANNOUNCEMENT OF THE COURSE

RELIGIOUS SECTION

The fourth section of the Course, presenting the religious aspect of the subject, will include articles by the following authors:

Right Rev. Samuel Fallows, LL.D., Presiding Bishop of the Reformed Episcopal Church. Author of "Health and Happiness."

Bishop Fallows will deal with religious aspects of the subject from extensive experience of religious and patriotic service.

Rev. Lyman P. Powell, Rector of St. John's Church, Northampton, Mass. Author of "Christian Science; the Faith and its Founder."

Mr. Powell will write from first-hand experience of the work of a clergyman in applying psychotherapy.

Rev. Albert B. Shields, Ph.D., Lecturer on Psychotherapy in Tufts College.

Dr. Shields will write on religious aspects of the subject.

Dickinson S. Miller, Ph.D., Professor of Philosophy at Columbia University.

Dr. Miller will write on "What Religion has to do with It."

HISTORICAL SECTION

The division line between the religious and the historical sections is not always clearly marked, but it is thought convenient to readers to maintain it. Among the contributors to the historical section are:

Rev. Loring W. Batten, Ph.D., S.T.D., Rector of St. Mark's Church, New York; Professor of Old Testament Literature and Interpretation in the General Theological Seminary. Author of "The Old Testament from the Modern Point of View," "The Hebrew Prophet," etc.

Professor Batten will write on the "History of Healing in the Old Testament."

L. W. Bevan, Ph.D., Associate Editor of the *Churchman*, will write on the "History of Healing in the New Testament."

Rev. Joseph Cullen Ayer, Jr., Ph.D., Professor of Ecclesiastical History, Episcopal Divinity School, Philadelphia.

Professor Ayer will write on "Healing in the Early Church."

Rev. Curtis Manning Geer, Ph.D., Professor of Church History, Hartford Theological Seminary, Hartford, Conn.

Professor Geer will write on "Healing in the Mediæval Church."

Max Eastman, Ph.D., will write on "Shrines and Relics the History of Healing."



R. S. WOODWORTH, A.B.,

Ph.D.,

Professor of Psychology, Columbia University.

E. E. SOUTHARD, A.M.,

M.D.,

Assistant Professor of Neuropathology, Harvard Medical School.

PSYCHOTHERAPY—A COURSE OF READING



CHARLES LLOYD TUCKEY,
M.D.,

Author of "Psycho-Therapeutics," London.

EDITORIAL AIDS

To render the most efficient and comprehensive service to the reader the various articles contributed by authorities presented will be so related and fitted together as to make a consecutive and progressive treatment of the entire subject. The whole will be edited with a view to continuity and clearness.

Summaries and introductions to the contributed articles, supplied by the editorial staff, will serve the purpose of bringing out the relation of one article to another and to the course as a whole and will assist in summing up the progress made from point to point in the study of the subject.

Illuminating sidelights will be thrown on the material presented in the articles by notes compiled from authoritative sources, supplying collateral reading and giving the student in cases of divided opinion the benefit of a variety of views.

A glossary will be provided in each number which will supply simple definitions of technical scientific words. This will serve as an aid to the ready com-

prehension of terms current in modern science so far as the nature of the subject requires their use. It may be said in general, however, that the course will be written with an aim to the employment of nontechnical language which, while scientifically accurate, should present no difficulties to the average reader.

FORM OF PUBLICATION

The Course of Reading will be issued in twelve monthly parts. It will be handsomely printed in a large type on an ample page of pleasing appearance. Headings and initial letters of simple and tasteful design will be uniformly employed to add to the attractiveness of the pages. It will be bound, flexibly sewed, to lie flat in the hand and with a durable cover of distinctive design. In size, the publication will be a large quarto, containing from sixty-four to eighty-eight pages in each issue, furnished with one or more artistic reproductions of portraits of distinguished contributors.

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